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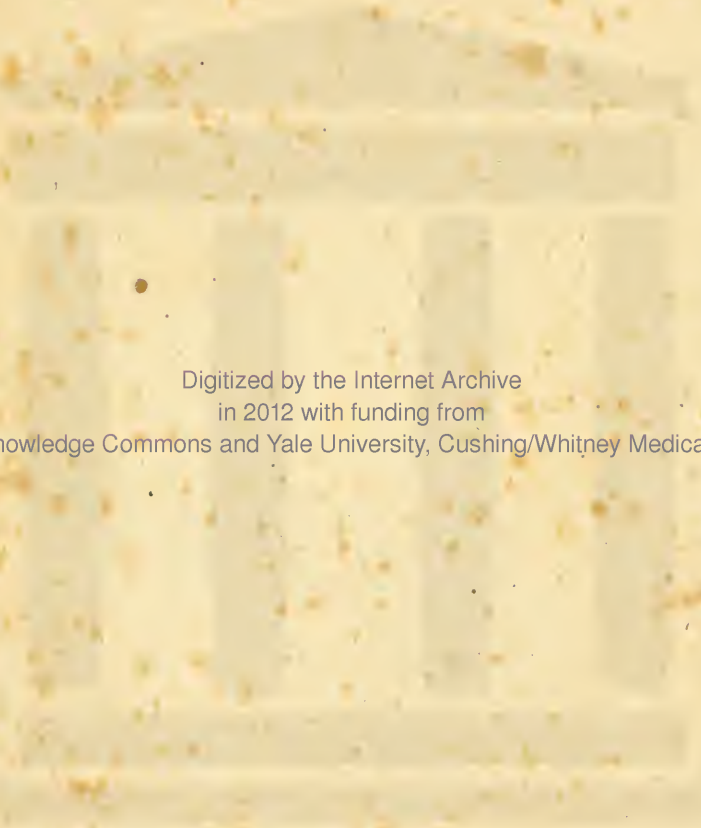
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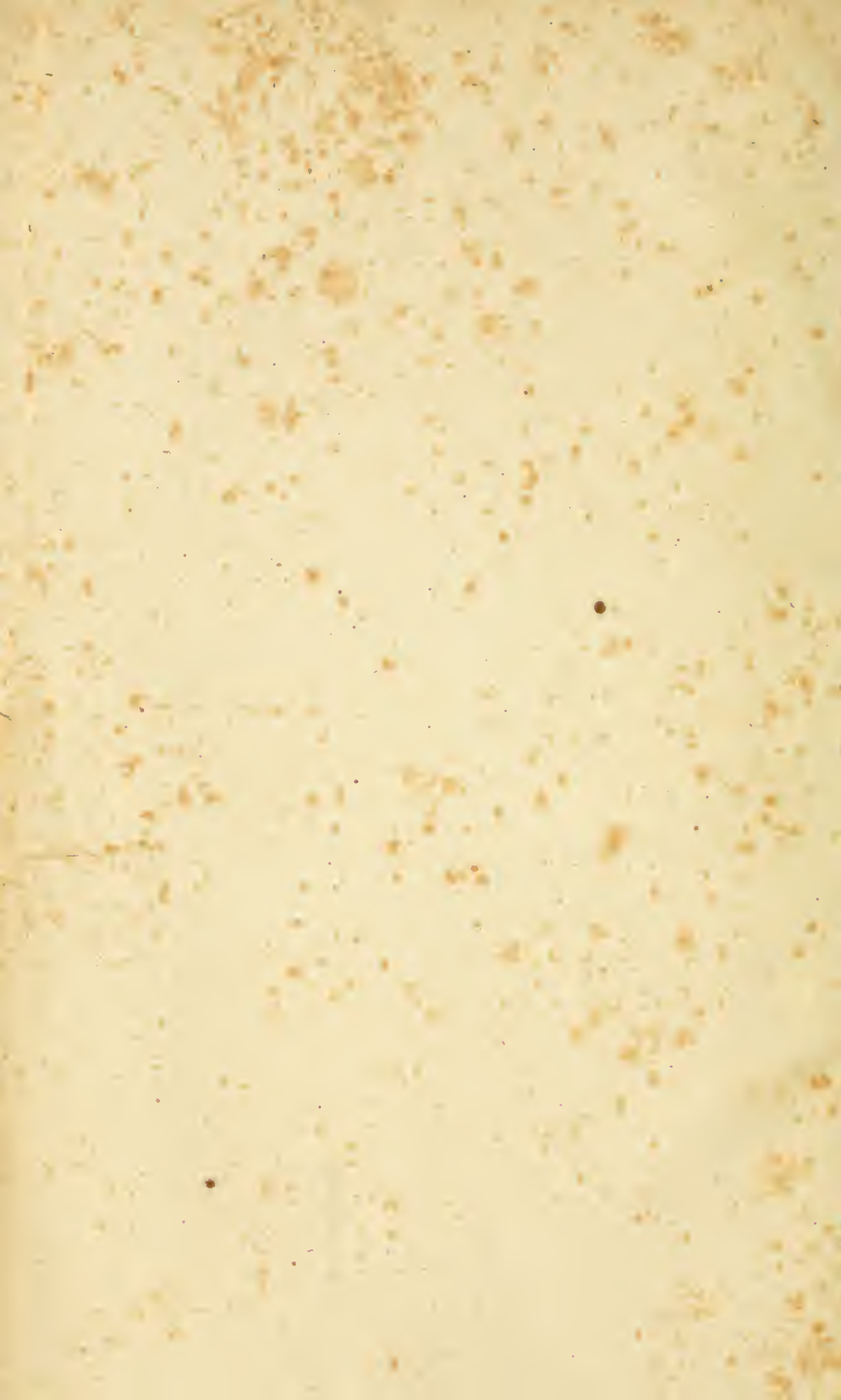
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A MANUAL
OF
MEDICAL JURISPRUDENCE,

COMPILED FROM THE

BEST MEDICAL AND LEGAL WORKS:

BEING AN ANALYSIS OF A

COURSE OF LECTURES ON FORENSIC MEDICINE,

ANNUALLY DELIVERED IN LONDON.

BY MICHAEL RYAN, M. D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS IN LONDON; MEMBER OF THE
COUNCILS OF THE LONDON MEDICAL, AND MEDICO-BOTANICAL SOCIETIES:
LECTURER ON THE PRACTICE OF MEDICINE, OBSTETRICS,
AND MEDICAL JURISPRUDENCE.

FIRST AMERICAN EDITION,

WITH NOTES AND ADDITIONS, BY R. EGLESFELD GRIFFITH, M.D.

LECTURER ON MATERIA MEDICA AND MEDICAL JURISPRUDENCE IN THE
PHILADELPHIA SCHOOL OF MEDICINE.

PHILADELPHIA:
CAREY AND LEA.

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1832.

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J. BIÖREN, PRINTER, NO. 3, FRANKLIN PLACE.

P R E F A C E.

THE object of the author of these pages is to give a concise and comprehensive view of the received Principles of Medical Jurisprudence, and to collect together scattered and isolated facts, from the standard works of legal and medical writers. He is inclined to hope, that this little volume contains all that is valuable in the systematic works upon the subject, and numerous other topics of vast importance to medical practitioners, which have no place in such productions. In proof of this assertion, he refers the reader to the ethical and legal parts of this work, and to the articles on medical evidence and adulterations of alimentary matters. He hopes that the promulgation of medical ethics, or the institutes of professional conduct, will contribute in no small degree to maintain and support the honor, dignity, character and utility of the profession, by impressing the minds of medical students with a sense of the noble and virtuous principles which have always characterized their predecessors, and which ought ever to distinguish the scientific cultivators of medicine.

Another novel and important feature in this production is, the exposition of the laws relating to the different orders of the faculty in these kingdoms, which cannot fail to prove instructive and useful, by informing medical men of the immense power, great influence, and high privileges conferred upon them by the legislature, by exempting them from the performance of many civil duties, and by deeming their evidence conclusive in an immense number of civil and criminal proceedings, which affect the lives, the liberty, the honour, reputation and property of every class of society; in a word, the dearest privileges of our unequalled constitution. For many facts mentioned in this part of the subject, the author is indebted to the works of Dr. Paris, and Mr. Fonblanque, of Mr. Wilcocks, and of Mr. Scully, the celebrated Irish barrister.

The medical part has been compiled from the standard sys-

tems on forensic Medicine, both domestic and foreign, and illustrated by the opinions and experience of the author. The works of Drs. Male, Gordon Smith, Duncan, Paris, Bèck, Christison, Fodéré, Mahon, Chausier, Orfila, Briand, Sedillot, &c. have been laid under large contribution, and the extracts duly acknowledged.

The chapter on medical evidence has been condensed from the valuable lectures, lately delivered in the London University by Professor Amos, as published in the *London Medical Gazette*. Under this head are considered the powers of coroners, and *the propriety and expediency of appointing medical men to the office of coroner*.

It has been the author's anxious wish to compress the fullest information in the smallest space, and in the most familiar language, in order to simplify the subject, and render it intelligible to every class of medical practitioners, to barristers, solicitors, coroners, magistrates, and general readers. Every medico-legal fact which can become the subject of judicial inquiry, is accurately detailed, so that this Manual may be fairly looked upon as a text book for the practitioners of law and medicine. It is intended to save both much trouble and research. Whether the author has executed the work in a satisfactory manner, must be decided by his contemporaries; but he consoles himself with the reflection, that his design and intention were good, had he sufficient ability to execute them as he wished.

In exposing the absurd distinctions, the defective state of the laws relating to the profession, and the gross abuses of its constituted authorities, the love of freedom and of equality, with an ardent desire to promote the interest of his favourite science, and of humanity, have impelled him to declare the truth however unpalatable that may be in certain quarters, or to the different orders of the faculty. His motto has been, "*amicus Socrates, amicus Plato, sed magis amica veritas.*" He has not been the advocate of any party, of any order, of any corporation, but the advocate of the whole profession. He has examined the whole of the charters and statutes relating to the practice of medicine in these countries, and has found them defective, contradictory, oppressive, and, since the legislative

Unions between England, Scotland, and Ireland, highly unjust and impolitic. In proof of this statement, we have only to recollect the fact, that a Scotch physician, surgeon, or apothecary, cannot legally practise in England; an English member of the faculty cannot practise in Ireland; and an Irish member can neither practise in England nor in Scotland. Such is the state of the law, which was just and right when the three countries were distinct nations, but is unjust and preposterous since they have formed one united empire. The author has, therefore, considered that there never was a more auspicious period than the present for exposing the absurd state of the laws relating to the faculty in the United Kingdom, when the propriety of constitutional, ecclesiastical, and legal reforms, is the subject of national discussion; and when medical reform is loudly demanded by the whole profession, with the exception of the few sordid monopolists. It need scarcely be stated that the principles and practice of medicine and therapeutical agents, are identically the same in every part of these countries.

Medical Jurisprudence is at length included in the course of study required by the Apothecaries' Company, but is strangely excluded in the course required by the Royal College of Surgeons. Had not that noble Institution, the University of London, appointed a professor of Forensic Medicine, chiefly at the recommendation of the philanthropic Dr. Birkbeck, this branch of medicine would as yet have no place in the course of medical education required in England.

Nevertheless, the most casual observer must be convinced, by daily observation, that the ignorance of ethics and medical jurisprudence, impedes or arrests the career of the medical practitioner, and frequently destroys professional reputation altogether. If proof were demanded of the validity of this position, we need only refer to the newspaper reports of legal proceedings, where we daily observe ample attestations of the fact. We peruse the most absurd and unscientific medical evidence, more especially in the reports of coroners' inquests, which could never have appeared, had the witness a proper knowledge of forensic medicine, or had the coroner been a medical practitioner. Such displays of ig-

norance excite the pity and regret of the scientific portion of the faculty, and the ridicule of the legal profession, and of the public. Mr. Amos has well illustrated this defect, in his admirable cautions to medical witnesses, in which he has cited many cases to shew that medical evidence has been censured by the bench, ridiculed by the bar, derided by the auditory, and entailed obloquy and disgrace upon the unfortunate witness.

Medical practitioners should be aware, that all the rising barristers of our criminal courts attend lectures on legal medicine; and often does forensic fame arise from the ability with which an advocate examines a medical witness. A knowledge of medico-legal science is almost as indispensable to the one as to the other; and the coroner who is ignorant of it, is evidently incompetent to discharge his duty to the public, or to secure impartial justice to the accuser or accused. This has been incontrovertibly proved in the article on medical evidence.

It has been erroneously stated by some writers, that the science of medical jurisprudence, is nothing more than the application of the elementary branches of medicine to the elucidation of judicial investigations; and consequently that a scientific medical man must necessarily be a good jurist. This is not correct, inasmuch as the most scientific physicians and surgeons have proved to be the worst jurists, because they could not derive the requisite information on medico-legal science from the common systems of medicine or surgery, as it is only to be derived from works exclusively devoted to the subject. In no lectures or works, except those upon this science, is a student informed of the laws relating to his profession; of his rights, privileges, and immunities; of the cases, civil and criminal, on which he is liable to be called to give evidence; of the received opinions upon these cases; of the danger of wounds, contusions, and all injuries prejudicial to health or destructive of life; of the analysis or mode of detecting the numerous poisons; of the manner of giving evidence, or of his ethical duties in public and in private practice. It is therefore manifest, that medical jurisprudence is a distinct science, and one of the greatest importance and utility to the

members of the medical and legal professions. If it could be taught by the professors of the elementary branches of medical education, there would be no need of a separate professorship; which exists, however, in all the medical schools of these and foreign countries.

In conclusion, the author has to remind the critical reader, that in attempting to compress the extensive information comprehended in the narrow limits of these pages, brevity of expression, and too much conciseness, may have rendered the style occasionally obscure or inelegant. This perhaps may be pardoned in a work chiefly intended for medical students, which was originally published in one of the periodicals (*The London Medical and Surgical Journal*), to fill up lacunæ, and arranged as the suddenness of the occasion demanded; which in general afforded little time for attending to the beauties of style, to euphonious sentences, or to the other qualities of literary composition. If the work supply a want, or contribute to the maintenance of the character and utility of medicine, or in any way benefit the interests of mankind, or the administration of justice, the object of the author will be fully attained.

PRELIMINARY OBSERVATIONS TO THE AMERICAN EDITION.

IN presenting an American edition of Dr. Ryan's Manual to the public, the editor has been influenced by a hope, that a perusal of the concise, yet plain rules of conduct laid down by the author, for the guidance of practitioners in the intricate subjects connected with their duties to the public, would induce its readers to pursue this important, yet neglected branch of medical science. Dr. Ryan's work, however, is by no means intended for the instruction of medical men only, it is equally calculated to enlighten gentlemen of the bar, and even general readers, on the various subjects on which it treats. The author's great object appears to have been, to afford the greatest quantum of information, in the smallest compass, and in the simplest and clearest manner. It is, in

fact, an excellent text-book, or *catalogue raisonnée* of the numerous questions in which jurisprudence calls on her sister science for elucidation.

In preparing it for the press, the editor has taken considerable license, by omitting such parts as refer merely to the local laws of England, and by inserting such additional observations or facts, as he thought might elucidate the subjects.—Chapter V., on the laws relating to the profession, has been entirely re-written, in order to accommodate it to the laws of the several states. The same has been done with Chapter XXI. on medical evidence: this being a subject on which Dr. Beck has not touched in his admirable work, and having been considered by Dr. Ryan in too cursory a manner, it was thought advisable to present a fuller view of it; in doing this, the editor has freely availed himself of Dr. Gordon Smith's "Analysis of Medical Evidence;" he must also acknowledge his obligations to J. P. Griffith, Esq. for much of the legal information contained in these two chapters.

To the chapter on insanity, an abstract of Professor Cooper's digest of the laws relating to insanity, has been appended; and to that on poisons, a condensed view of the general phenomena of poisoning, principally derived from Dr. Christison's treatise. These, and all other additions, are marked by brackets.

In conclusion, the editor would state, that he has not scrupled to avail himself of all the materials within his reach, whenever he deemed they might add to the usefulness of the work. Dr. Beck's researches have been frequently resorted to in elucidation, as have the treatises of Briand, Smith, Rush, &c. &c.; and in some instances, without due acknowledgement of the original source, though in general he has been anxious to "render unto Cæsar the things that are Cæsar's."

INTRODUCTION.

It is greatly to be lamented that the study of Political or State Medicine, or the polity of medicine, with which our professional and social duties, our fortunes, our liberties and even our lives are essentially connected, should be disregarded and unenforced by the medical authorities in England. This branch of science forms a part of the medical education in Ireland and Scotland, and in all other nations in the old and new world, in which medicine is cultivated. The present age is universally acknowledged to possess this great advantage over preceding ones, that the inmost recesses of human science are laid open, the knowledge hitherto supposed to appertain exclusively to certain professions, is in general rendered obvious, or at least accessible to the public at large; and hence it is that our judges, lawyers, juries and all men of education, fully comprehend the excellence and great importance of what is improperly denominated medical jurisprudence; and therefore there is a great necessity that medical men should be deeply versed in this branch of science. It is now generally admitted that no system for the instruction of medical students can be complete that does not include a knowledge of State or Public Medicine, which renders the practitioner competent to discharge the various important duties imposed upon him by the humane and unequalled laws of this empire. This comprehensive subject relates to the conservation of the public health and physical welfare; but no attempt has been made in this country to collect or arrange the whole of the information on this topic, or to offer a systematic view of it. There is no English work that comprehends or fairly exhibits all the duties of medical men in public, and private practice, or even those imposed by the common and statute law of the country, relative to the powers, privileges, honours, and emoluments of the profession; or to the rights and privileges of all the various ranks and gradations of society in which they live. It is therefore to be hoped that a concise and comprehensive compendium of the moral and legal duties of medical men may not be uninteresting to those now engaged in the study of medicine. The outlines of such a work only can be in the present form attempted. It is too obvious that a want of a complete knowledge of ethics and state medicine has impeded the ca-

reer and success of thousands of medical men; and frequently destroys professional reputation altogether. They are constantly in operation, and have infinitely more influence on the fame and fortune of the faculty, than all the elementary branches of education so strenuously enforced. It is perfectly impossible to comprehend the policy of those who regulate medical education in this section of the nation, and exclude the study of the subjects under consideration. It is right however to disabuse the minds of students of a very erroneous idea which they entertain, and which is indeed unfairly impressed upon them by teachers, namely, that when they have obtained the testimonials of the respective medical authorities, fame and fortune are easily attained, as the public will appreciate the dignity, rights and privileges conferred by the corporations. This is a gross delusion, and contrary to the opinions of the most eminent and honorable members of the profession, who have ever unanimously declared, that it is one thing to be fascinated with the study of the sublime and interesting science of giving health to man, but another to engage in its practice, successfully to overcome the objections made to youth, and the innumerable difficulties which impede the young practitioner. These obstacles are only to be removed by a profound knowledge of science, which leads to a perfect knowledge of mankind, and by the due observance of those moral duties which inculcate the highest principles of virtue and honour, and have been always universally allowed to distinguish men profoundly acquainted with the noble science of medicine. It will appear in the course of these observations, that a perfect knowledge of public or forensic medicine is indispensable to medical practitioners. If these conclusions be admitted, is it not a matter of astonishment that medical students in every part of this empire never hear a single observation during their education on the ethical duties they owe the profession and the public. A man who obtains the degree of M. D. is as ignorant of medical ethics as he is of the cause of the perpetual motion; he is ushered into practice without the slightest acquaintance with the moral and delicate duties which he has to perform in the different situations in society in which he will be placed. Hence the dishonourable conduct for which the profession in this age is so remarkably distinguished, and hence the chief cause of the humiliation and degradation of the noblest of the human sciences in the estimation of the public. Had students been duly informed on the duties and responsibilities they owe the profession and the public, those disgraceful private disputes, and those disreputable blunders made in our courts, would be of rare occurrence. The only

essays we have on medical ethics are those of Drs. Gregory* and Percival,† both unfinished and imperfect, both admirable so far as they extend. Both these excellent works ought to be carefully studied by every man engaged in the practice of medicine; to use the elegant language of the latter "the study of professional ethics could not fail to invigorate and enlarge the understanding; whilst the observance of the duties which they enjoin, would soften the manners, expand the affections, and form the individual to that propriety of conduct which is essential to the character of a gentleman." There never was a period in the progress of medicine in which the study of ethics is so much wanted as at the present time. It is hoped that by arranging the whole of the duties moral and civil of medical men in a concise form, a chasm in medical literature will be filled up.

It is an extraordinary fact that in the United Kingdom where the various branches of medical science are so highly cultivated, that the study of state medicine should be neglected and disregarded, though it ranges over the vast field of medical erudition, extending through the several regions of the universe, the animal, vegetable, gaseous and mineral kingdoms; in a word, from the azure fluid above to crude matter below, and comprehending the whole of the fascinating sciences included in medicine; yet there is no situation in which a medical practitioner can be placed, that requires a more cautious and judicious discharge of his duties than in judicial proceedings; the whole of his elementary studies are called into operation, general anatomy, physiology, semeiology, pathology and chemistry.

General anatomy teaches him the natural structure of the different textures of the body; and *pathology* distinguishes the appearances indicative of death by injury from extinction of life by natural causes. *Semeiology* enables him to discriminate between the symptoms induced by injury, or by natural disease. *Chemistry* is highly useful by enabling him to discover substances of a deleterious nature; while *Physiology* teaches him to determine the disorder of functions caused by unnatural means. Thus each of these sciences is of great value to the medical jurist, and affords him much aid in the prosecution of his inquiries in medico-legal investigations. In a word, a man who appears as a medical witness must possess the whole mass of knowledge, however abstruse and comprehensive, which constitutes the science and practice of

* Duties and qualifications of a Physician.

† To this short list the name of Dr. Rush must be appended; his essays on the respective duties of Physicians and patients, lead us to regret that he published so little on this important subject.—*Am. Ed.*

medicine; his evidence is conclusive in a vast number of legal investigations, both civil and criminal, and on it often depend, the life, liberty, honor, property, of every class of individuals—the dearest privileges conferred by our glorious and unequalled constitution.

It is acknowledged in every civilized country that state or public medicine is an important and essential branch of the studies of medical men. If we only advert to toxicology, one of its minor branches, we shall find it has done more for the elucidation of the actions of medicines, than all the other branches of medicine. It is to it we owe our knowledge of the actions of the different kinds of poisons, as well as their antidotes; and the exclusion of a host of popular remedies, many of them useless or injurious; and to it we stand indebted for the grand discovery of the bad effects of former antidotes, many of which only increased the noxious action of poisons. It was the toxicologist who discovered the virtues of albumen as an antidote for corrosive sublimate and verdigris;—of bark for tartar emetic;—of alkaline sulphates for sugar of lead;—of alkaline and earthy chlorides for liver of sulphur;—of ammonia and chlorine for prussic acid;—of magnesia and chalk for mineral and oxalic acids;—and vinegar and oil for the mineral alkalis. It was he also who pointed out the bad effects of former antidotes, as the alkalis in poisoning by arsenic and oxalic acid; the acetic acid in poisoning by opium and other narcotics; and the salts of copper and alkaline sulphurets for arsenic and metallic compounds; and of fixed oils in poisoning by lyttæ or cantharides. It was he who first proposed the application of the stomach pump in the treatment of poisoning, and discovered the splendid operation of transfusion. By his investigations he has laid down unerring rules for the direction of those who may henceforth laudably endeavour to discover new antidotes. During the present century the most splendid discoveries have been made in physiology, by the investigations of the actions of poisons on animals. The observations of the effects of poisons have led to many of our received views on the phenomena of the functions of life, especially absorption, respiration, and the action of all poisons through the medium of the nervous, and to the exclusion of the venous and absorbent systems. These conclusions tend to elucidate the action of contagion, infection and malaria on the human body, and therefore are highly useful and important. The results of the experiments of Brodie, Wilson, Philip, Orfila, Magendie, Barry, Addison, Morgan, Christison, and a host of others, leads to the most important practical conclusions. Thus the action of all the new alkalis, strychnine, brucine, morphine, &c. was

learned from the toxicologist. These and many other of our most potent and valuable remedies in large doses are poisons, and this fact has been highly conducive to the discovery of their effects as therapeutic agents. In confirmation of the validity of this position, I may observe that the direct paralysis caused by opium when applied to muscular tissue, explains its efficacy in spasmodic affections. The similar effects of acetate of lead explain the efficacy of that medicine in dysentery: the stimulating effects of nux vomica on the spinal cord and nerves, led to its employment in the various forms of palsy, in which it has the best effects, according to the testimony of Dr. Bardsley, of Manchester, and others. It is unnecessary to multiply citations on this point, for it is universally admitted that we owe all our new and valuable medicines to the science of toxicology. This science is now brought to a state of certainty, by the great research, the acute discrimination and the repeated observation of Professor Christison, of Edinburgh, whose splendid work on the subject, is an honour to the medical literature of the country, and will be esteemed a work of authority and reference. It will assist in superseding the present absurd exclusion of reference to authorities, from the system of medical evidence in this part of the country. But an immense number of other departments as interesting as toxicology are included in state medicine, or as it is improperly called, medical jurisprudence. But first, it is right to explain the difference between the terms State Medicine and Medical Jurisprudence. The majority of writers apply the terms political medicine, state medicine, public medicine, public hygiene or police of health, and medical police, to the acts of a government, legislature and magistracy, for the conservation of the public health, and for the legislation relating to the practice of the medical profession.

Medical jurisprudence, legal, forensic, juridical and judiciary medicine, is a science by which medicine and its collateral branches are rendered subservient to the elucidation of various civil and criminal cases during judicial inquiry.

Dr. Gordon Smith divides the subject into two divisions:

I. FORENSIC MEDICINE; or the duty of the practitioner in *Courts of Justice*.

II. MEDICAL POLICE; or the duty of the practitioner in co-operation with the *legislature*.

The Germans include both these divisions in the term state medicine. In the London University some confusion has existed in the minds of students in reference to the professorship of jurisprudence, and of medical jurisprudence; and a large portion of the public find it difficult to distinguish the differ-

ence, which would be obviated by the substitution of state medicine for the latter. Within a brief period a lawyer in one of the inferior courts was at a loss to know what had a professor of medical jurisprudence, or as he classically expressed it "medical jurisprudentes," to do with a case of rape. In the following observations, the term state medicine will be adopted; and the laws relative to the medical profession first enumerated, omitting the many other topics included in medical police, and next in order is the consideration of Forensic medicine. This arrangement is the best that can be adopted under the present condition of state medicine in this empire. The first division will comprehend a summary of the laws relative to the practice of medicine, including those relative to the rights, privileges, and emoluments of the whole profession, and to all the civil and criminal cases with which they can be concerned in judicial proceedings. The second division will embrace the received opinions on all medical questions that can be mooted in courts of justice. Both divisions will be preceded, as already stated, by a concise detail of the moral and professional duties of medical men, which is necessary to explain the vast powers entrusted in this and other nations to the faculty, and the esteem and veneration universally entertained for them. The whole of these divisions are obviously included in the general term, state medicine,—a science by which the principles and practice of medicine and its collateral branches are rendered subservient to the construction, elucidation and administration of the laws and to the preservation of public health. I have said that forensic medicine includes many subjects equally important as toxicology. It is a science of the greatest importance to the just investigation of various questions comprehending offences against the person and property or the rights of persons and of things, as the law expresses it. These subjects may be divided into questions relative to the dead, and to the living. The first division embraces the elucidation of all cases of sudden death under mysterious or unusual circumstances, of homicide, and of persons found dead from wounds, bruises or other mechanical violence; from hanging, strangling, drowning, noxious inhalations, intoxication, hunger, burning, suicide, poisoning from the various vegetable, mineral animal and gaseous products; proicide or the destruction of offspring including fœticide or criminal abortion, and infanticide or child-murder; the distinction between homicide, suicide, accidental and natural death; and lastly the decision of survivorship of infant and mother, when the disposition of property depends upon the issue.

The second division embraces questions relative to the living; 1, injuries to the person, dangerous but not mortal, as maiming and mutilating, the performance of surgical or obstetrical operations, cæsarean section and premature labour, the justification or danger of corporal punishment, the evidence of rape or attempts at female violation. 2, Physical disqualifications for social functions and the enjoyment of civil rights or official situations—as respects purposes in general, which embraces moral and intellectual defects, aberrations and peculiarities, including insanity and all the varieties of mental alienation, the deaf and dumb, verification of the fact and possible alleviation of the state, blindness, defective and redundant organization; the consideration of physical peculiarities and defects, impotence and sterility which annul marriage, and afford pleas for divorce. Disqualifications for assuming the military and naval services, which include examination of recruits, the discovery of imposture or feigned diseases and the disproval of unjust imputations. Several miscellaneous topics not easily referable to the other divisions are to be considered; as the verification, duration and fallacies of utero-gestation, pretended and concealed pregnancy, involving the legitimacy of birth, and female reputation; the question of superfætation included, as also monstrosities in reference to sexual ambiguity and disposition of property; the verification of age and identity by physical considerations; hereditary diseases and influence of the maternal imagination on the formation and development of the embryo; the basis of exceptions and the means of estimating the insurability of lives, and lastly the economy and nature of medical evidence. The questions connected with medical police are of great importance, though of rarer occurrence than those included in forensic medicine. The medical jurist has many other duties to perform, when consulted by the state for the elucidation of medical legislation, or the conservation of the public health. Dr. Gordon Smith comprehends the following topics in this branch of the subject. He has to give evidence “on the characteristics and import of the several gradations of in the period of human life, from the hour of birth to its natural decay and final extinction, comprehending many circumstances relative to physical education and economy—as gymnastic exercises, moral management, &c. &c.—population and marriage—the proper period for marriage, fecundity, and mortality as questions of state importance—the influence of manners on health—air, food, drink—importance of their purity and wholesomeness, including the medical consideration of nuisances, adulterations, culinary poisons; public cleanliness, regulations

for markets, slaughter-houses, burial-grounds, &c. &c.—topography, comprehending climate, soil, meteorology, productions, &c. of countries and particular situations—clothing and dwelling places—public buildings for numerous inmates, manufactories, barracks, ships, prisons, alms-houses, work-houses, churches, hospitals, asylums, &c. as regards ventilation, warmth, economy, discipline, labour, &c.—the poor, employment and management of, with a view to preserve them from disease—contagious, epidemic, endemic diseases, enumeration and history of the prevalent varieties, plague, fevers, smallpox—hydrophobia, &c.—precautionary measures against them, and quarantine, &c. dangers in certain situations, as in mines, from lightning, &c. measures precautionary and remedial with regard to accidents—humane and resuscitating institutions—and lastly, medical economy and ethics—medical education—distinctions—surveillance and corporate authorities—great importance of anatomy, and necessity of interference on the part of Government—qualifications of accoucheurs—necessity of state medicine—duties, privileges, and moral deportment of medical men—qualifications for public service—professional remuneration—great and general disadvantages of the present system, proposed improvements, and propriety of appointing medical men to the office of coroner.

Such is an imperfect account of the questions to be considered under the term state medicine, but a large number remain to be mentioned which could not be referred to any of the divisions proposed. Dr. Beck thinks all attempts at arrangement unsatisfactory, and considers that the full discussion of any medico-legal question is all that is important. He has given an elaborate history of state medicine and proved that traces of the science are to be found as early as the institution of civil society. In proof of his assertion he cites the Jewish, Egyptian and Roman histories. Dr. Gordon Smith, in his last introductory lecture at the London University, stated that he could refer to 10,000 works upon the subject. It would be an insult to the understanding of the reader to offer further proofs of the great utility and importance of the science of what is called medical jurisprudence.

In the succeeding essays an attempt will be made to give an outline of the most important subjects, which most frequently engage the attention of the medical jurist; and a future opportunity must be chosen to comprehend a full detail of the whole of the moral and civil duties imposed on the profession, by the social institutions and legislative enactments of this country.

CHAP. I.

Of the Confidence reposed in Medical-men, and the Duties they owe Society.

IN the beginning of the world, man was endowed with a knowledge of the innoxious and noxious properties of all the productions of the creation; and to this period must be referred, the origin of that science which comprises the consideration of the innumerable objects that are beneficial or injurious to human health and happiness. The healing art may therefore be traced so far back as the creation of the world. The concurrent testimony of historians of all ages proves it to be the noblest and most useful of human pursuits; and hence the esteem and veneration universally entertained for its cultivators by mankind. The dignity of medicine arises from the nobleness of its subject and its end; its subject is the human body, which excels all other material bodies: its end is health, which is the greatest temporal concern of man.—Necessity conceived the art of Medicine, self-preservation brought it to light, reason nourished it, long use promoted it, and experience at length completed it and made it absolute. It was nearly coeval with man in consequence of the primeval malediction, which doomed him to the deprivation of eternal life, the liability to corporeal disease and to death itself. The presence of bodily infirmity produced pain and impelled him to seek immediate alleviation, and to employ means for that purpose, either by instinct, experiment, or spontaneous exertion. The many injuries to which he was exposed in the early ages, must have frequently obliged him to suppress hæmorrhage, to remove the deformity of dislocation and to adjust the painful fractures.

Finally, the vicissitudes of season, the varieties of climate, the influence of the circumambient air, the action of surrounding bodies, and the construction of the human frame, must have rendered diseases coetaneous with mankind. The antiquity of medicine is clearly proved by a reference to the sacred writings,* wherein we also learn that Solomon wrote very amply on the nature of animals and plants, from the

* Gen. c. lx. AC. 1689. Exod. c. xxi. Lev. c. xii. Ezec. xlvii.

hyssop "that grows out of the wall" to the cedar of Lebanon,* and his writings were copied by the Greeks, Arabians, and Romans.

The heathens also highly esteemed the healing art. Democritus said it was the sister of philosophy; the latter removed affections of the mind, the former diseases of the body. Hippocrates said the ancient cultivators of medicine ascribed its origin to the Deity, in which he concurred, as also did Galen. This was likewise the belief of the Christians, for St. Austin observes. "*medicina non invenitur unde ad homines manare potuerit. nisi a Deo.*" De Civ. Dei. The healing art was rendered pre-eminent by the divine Redeemer having practised it, while he avoided all other human pursuits.

The excellence and pre-eminence of the healing art was admitted by the Roman orators and moralists. Cicero said, "*in nulla re homines propius ad deos appropinquant, quam salutem hominibus dando.*" Seneca observes, "*quædam plurius esse quam emuntur; emis a medico rem inestimabilem vitam ac valetudinem bonam.*" Medicine was encouraged, cultivated, and practised by kings, princes, and pontiffs; the highest, wisest, and best of men. In proof of this position it may be stated, that Solomon, Saphoris and Gyges, Kings of Persia, Habidus King of Pontus, Mesue King of Damascus, Avicenna prince of Cordova, Isaac, the adopted son of the King of Persia, Nicholas V. and John XXII., Roman Pontiffs, illustrated medicine by their writings; and Homer records the great esteem entertained for Machaon and Podalirius the sons of Esculapius in the Grecian army; Virgil that Japis, physician to Æneas, and Silius Italicus that for Synalaus the physician of Hannibal. All civilized nations conferred the highest privileges and honors on the practitioners of medicine. They were exempt from the performance of all civil duties; and they were supported by the state in many countries; and ample, nay prodigal rewards were bestowed upon them throughout the civilized world.—The history of medicine affords abundant proof of this asser-

* Kings, c. iv. 33.

tion.* All wise and prudent emperors and kings, duly estimated the utility and excellence of the sanative art, and were extremely desirous of having learned and experienced physicians to preserve their own and their subjects' health, and hence the honors, immunities and privileges bestowed in every civilized nation upon the faculty. It is unnecessary to enumerate the numerous temples dedicated to the early founders of physic, or refer to the ranks so signally conferred on Hippocrates by the Athenians, or to the honors bestowed by all nations in succeeding ages on the profession. We may briefly mention that the court physicians and surgeons of our own country have had titles and emoluments conferred upon them, and never more freely than by our gracious sovereign, whose magnanimity, and patronage of all the arts and sciences, have been unequalled by any of his predecessors since the days of Alfred. Such is the custom of all nations in Europe.

Medical practitioners are those men to whom we confide our health, which is above all earthly concerns. To them are intrusted the existence of those that are most dear to us, and in their hands are placed the lives of our nearest connexions, and of the friends to whom we are most attached. All gradations of society are alike dependent on them, and must sooner or later require their assistance; for from the earliest period of life to the last moment of existence, their skill may be exerted to preserve health, to arrest the progress of disease, or to smooth the approach of death. Hence it is that no class of men enjoys the confidence of every rank of society to such an unlimited degree, as the practitioners of the healing art; and hence it is that they have ever acquired the esteem and veneration of mankind. That this confidence and esteem should be fairly deserved, the father of medicine and all his eminent successors to the present period, required an oath of their disciples, the principal obligations of which were the cultivation of every virtue that adorns the human character. A code of professional duties, or ethics was arranged, which all were obliged to obey; and which still

* Extract of a Lecture on Ancient Medicine, by the Author.

governs those who have been properly educated. But there never was a period in medical history, in which ethics were so neglected and violated as in this "age of intellect," nor the dignity of the science so degraded and disregarded. It is, therefore, necessary to inform the rising members of the profession, of those virtuous and noble principles which regulated the professional conduct of their predecessors, and procured that unbounded confidence and universal esteem bestowed on them by society in every age and country.

On Medical Ethics, or Precepts of Professional Conduct.

The duties and qualifications of medical men were never more fully exemplified than by the conduct of Hippocrates, or more eloquently described than by his own pen.* He admitted no one to his instructions without the solemnity of an oath, the chief obligations of which were, "the most religious attention to the advantages and cure of the sick, the strictest chastity and most inviolable secrecy about private or domestic matters, which might be seen or heard during attendance, and which ought not to be divulged." The Edinburgh University requires this oath on conferring the degree of M.D. and is the only university or college in this empire, that binds its members by so serious and necessary an obligation.

The father of physic strongly inculcated the necessity of the cultivation of piety and virtue; and held that his disciples should excel in religion and morals. He also maintained that they should acquire the most perfect knowledge of every form of disease, and of the best mode of treatment. He considered calumny and illiberality disgraceful, and the disclosure of the errors of a contemporary highly culpable. He was of opinion that the morals of a medical man should be excellent and unexceptionable, conjoined with gravity and humanity. He ought to be correct in every custom of life; and demean himself honorably and politely towards every rank in society, and thus will he promote the

* He flourished about 460 years before the present æra.

glory of his profession. To these precepts nature is the best guide. He is to retain in his recollection all remedies, their mode of preparation and application, and the use of all mechanical means which are employed for the cure of diseases. This is the beginning, middle, and end of medicine. Let him be cautious in his prognosis, and predict only those events sanctioned by observation and experience. In his approach to the sick, let his countenance be mild and humane, not rough, proud, or inhuman; and let him evince a sincere desire to afford relief; and employ all remedies with diligence and caution. He should be ready to answer all questions, establish constancy in perturbations of mind, allay tumult by reason, and be ever ready to afford relief in all emergencies. He is never to exhibit an improper nor dangerous remedy, even to a common malefactor: but try those medicines approved by the majority of the profession. If a patient desire popular remedies, he is to be cautioned against them, but left to his own discretion. If attendance be commenced without remuneration, the sick must not be abandoned. Any discussion relative to pecuniary matters is injurious, especially in acute diseases. When disease is rapid, there is no time to arrange concerning reward; it has no influence on a good practitioner, who is only anxious to preserve life, and enjoy the more noble gratification, the universal esteem of mankind. It is much better to accuse those cured of disease, of ingratitude, than to deny them aid when in danger.

Some, on account of friendship or acquaintance, expect attendance gratuitously, but these are worthy of neglect. In all cases the best remedies ought to be employed; and the reward should be consonant to the custom of the faculty, and to the wealth or means of the sick. In some cases aid is to be afforded gratuitously, which will ensure more renown than if remuneration had been awarded. If an opportunity offer in the case of a stranger or necessitous individual afford succour immediately. Some men are so avaricious as to extract riches from the most indigent, but these men seldom prosper, while the humane and good practitioner is considered an honor to his art. Consultations cannot be re-

fused, even to the most necessitous. "This I affirm by an oath, that one medical man should never invidiously calumniate another, or rob him of his merit, or diminish the confidence of his patient." Such were the leading features of the code of ethics, inculcated by the immortal founder of physic;* the chief obligations of which have been recommended by all his successors down to our own time. It must be conceded that the first duty of a medical practitioner in common with his species, is to God, for his sovereign majesty, supreme excellence, and infinite goodness. The history of medicine, of all other sciences, comprises the most intimate acquaintance with the works of nature, and elevates the mind to the most sublime conceptions of the supreme Being, and dilates the heart with the most pleasing ideas of Providence. It nearly extends through the whole range of the creation; and no other profession requires so extensive a knowledge of the works of Providence. The objects which engage the attention of the medical practitioner are the properties of the sun, moon, and heavenly bodies, the laws of their uninterrupted revolutions and various movements; the various productions of the earth, including the vegetable and mineral kingdoms, the innumerable variety of living creatures that fill the air, the earth and the waters, and the microcosm of the human body, with its wonderful organs, functions, and immortal principle. Now when we consider the creation, conservation of all these objects, and their subserviencies to human happiness, we can never reflect without the profoundest veneration upon the character of that Being from whom all these things have proceeded. We cannot help acknowledging what an exertion of benevolence creation was, of a benevolence how minute in its care, how vast in its comprehension!

The most eminent of the faculty have been distinguished for their piety; among whom we find the names of Harvey, Sydenham, Locke, Boerhaave, Arbuthnot, Haller, Hoffman, Sthal, Baglivi, Steno, Helmont, Riverius, De Hean, and in

* *De Medico, de Decenti, habitu aut decoro, Prenotiones,*

our own day, Gregory, Baillie, Bateman, Davy: and many other illustrious men now in existence. They studied the sacred volume, which, to use the language of Cicero when speaking of the twelve tables, "a little book that alone exceeds the libraries of all the philosophers in the weight of its authority, and in the extent of its utility." In it is to be learned the only complete history of the universe, the divine precepts of religion, which refer all honor and glory to the Author of all things, and good will to mankind. There is found the foundation of all ethics, "do unto others as you would they should do unto you." This is the great and first principle of human conduct, it commands man to observe justice and benevolence towards his fellow man; duties by which their reciprocation lead to his own and the general good. The cultivators of medicine have been most unjustly accused of favoring infidelity and a contempt of religion; and of late it must be acknowledged with pain, that an abortive attempt had been made which has given too much proof of the justness of the accusation. The attempt was as impotent as it was wicked, it was attacking youth on the weak side; and it was extinguished by the universal voice of the most eminent members of the faculty; for it was observed to have unhinged all the bonds of society in a neighbouring nation, and to have produced a degree of anarchy, confusion and atrocity unequalled in the annals of mankind. It contained not a single argument that had not been urged and refuted a thousand times before; and after all the schemes of a reluctant and erring philosophy, the indispensable resort is to a Deity and his ordinances. How appropriate the following distich to such philosophers:

Know thou thyself, presume not God to scan,
The proper study of mankind is *man*.

That philosophy which assails the attributes of the Supreme Being is fallacious, that wild hypothesis which is in direct opposition to the principles of revealed religion, can have few, if any disciples, in an age so enlightened as the present. The really learned in the medical profession have never been infected by the poison of infidelity

The doctrine of the materiality and mortality of the soul, which is that of materialism and phrenology, should for ever be exploded as totally false, and unworthy of all regard, as subversive of the fundamental principles of all religions, as introducing civil anarchy into the political economy of legislation, as substituting disorder for harmony, despair for hope and eternal darkness for everlasting light.

If materialism tended to promote the happiness of society, to assist our hopes, to subdue our passions, to instruct man in the happy science of purifying the polluted recesses of a vitiated heart, to confirm him in his exalted notion of the dignity of his nature, and thereby to inspire him with sentiments averse to whatever may debase the excellence of his origin, the public and the medical profession would be deeply indebted to the phrenologists. But the tendency of phrenology, however disguised, is to make mind a secretion or function of the brain, and thus to deny the immortality of the soul. Unbelievers, in general, wish to conceal their sentiments; they have a decent respect for public opinion, are cautious of affronting the religion of their country, fearful of undermining the foundations of civil society. Some few have been more daring, but less judicious, and have, without disguise, professed their unbelief and again retracted their opinions. In denying the immortality of the soul, they deny the authenticity of the Bible; they sap the foundations of all religions; they cut off at one blow the merit of our faith, the comfort of our hope, and the motives of our charity. In denying the immortality of the soul, they degrade human nature, and confound man with the vile and perishable insect, and overturn the whole systems of religion, whether natural or revealed. In denying religion, they deprive the poor of the only comfort which supports them under their distresses and afflictions, and wrest from the hands of the powerful and rich the only bridle to their injustice and passions: and pluck from the hearts of the guilty the greatest check to their crimes—that remorse of conscience which can never be the result of a handful of organized matter—that interior monitor which makes us blush in the morning at the disorders of the foregoing night, and which erects in the breast of the

tyrant a tribunal superior to his power. Such are the consequences naturally resulting from the principles laid down in phrenological writings. It is no intention of ours to fasten the odium of infidelity on any portion of our profession; but it surprises us that men, whose understandings have been enlightened by the Christian revelation, and enlarged by the study of medicine, (the most extensive and varied of all human sciences,) should broach tenets which equally militate against the first principles of reason and the oracles of the Divinity; and which, if true, would be of no service to mankind. Of what benefit to humanity would be the establishment of phrenology? We answer none; but on the contrary, the greatest injury. If any man be so unhappy as to work himself into the conviction that his soul is a function or a secretion of the brain, and of course must perish with it, he would still do well to conceal his horrid belief with more secrecy than the Druids concealed their mysteries. In doing otherwise, he only brings disgrace upon himself, for the notion of religion is so deeply impressed on our minds, that the bold champions who would fain destroy it are considered by the generality of mankind, and our profession, as public pests, spreading disorder and mortality wherever they appear; and in our feelings we discover the delusions of a cheating and unmedical philosophy, which can never introduce a religion more pure than that of the Christians, nor confer a more glorious privilege on man than that of an immortal soul. In a word, if it be a crime to entertain such a doctrine, it is consummate folly to boast of it. Whence this eagerness to propagate systems, the tendency whereof is to slacken the reins that curb the irregularity of our desires and restrain the impetuosity of our passions? It must proceed from a corruption of the human heart, averse to restraint, or from the vanity of the mind, which glories in striking from the common path, and not thinking with the multitude. In vain are the phrenologists informed by the anatomist, that he can find bile in the liver, urine in the kidneys, but none of the faculties of the mind in the brain. In vain are they told that after death, when volition has ceased, the motions of the muscles can be excited by galvanism,

and that though muscular motion be restored, we cannot recall volition, or the other mental faculties; rather a strong proof that motion and volition are not exactly the same thing. These and ten thousand other proofs are lost on the phrenologists. They set up the proud idols of their own fancies in opposition to the received opinions of their profession, and in opposition to the oracles of the Divinity; and in endeavouring to display absurdities in the Christian religion, fall into much greater. To them we can with due deference, and without disclaiming our title to good manners, apply the words of St. Paul to the philosophers of his time—"They became vain in their imaginations; professing themselves wise, they became fools."

Let the patrons of the revived and long refuted philosophy persuade their wives that their souls die with their bodies; let them instil the same doctrine into the minds of their children; let the doctrine become generally received—unfaithful wives, unchaste daughters, rebellious sons, and general confusion and anarchy will be the blessed fruits of their philosophy. To those philosophers the words of an able and learned prelate very forcibly apply—"The Bible has withstood the learning of Porphyry and the power of Julian, to say nothing of the manichean Faustus; it has resisted the genius of Bolingbroke and the wit of Voltaire, to say nothing of a numerous herd of inferior assailants; and it will not fall by your force. You have barbed anew the blunted arrows of former adversaries; you have feathered them with blasphemy and ridicule; dipped them into your deadliest poison, aimed them with your utmost skill; shot them against the shield of faith with your utmost vigour; but like the feeble javelin of the aged Priam, they will scarcely reach the mark, will fall to the ground without a stroke."*

The doctrine of materialism is not more discordant with the principles of revealed religion, than with the opinions of the greatest men who have ever adorned the science of medicine; men who were, and still are, as great ornaments to

* Bishop Watson's Apology for the Bible.

the literary world in general, and medical literature in particular, as they are useful to mankind.

“The first duty,” says Napoleon “of a medical man is to his God, the next to his king and country, and the next to his patients.”* This was the rule of duty of the greatest ornament of the medical profession, and comprises the whole institutes of professional conduct. The man who pays due homage to his Creator and obeys the laws laid down for his guidance must act honourably and justly towards his fellow creatures. A religious man cultivates all the virtues that adorn the human character, and justly place man the lord of the creation. He will be distinguished for humanity, sympathy, politeness, a large share of good sense, and knowledge of the world.—Dr. Gregory considered the chief of the moral qualities peculiarly required in the character of a physician was humanity, “that sensibility of the heart which makes us feel for the distresses of our fellow creatures, and which of consequence excites us in the most powerful manner to relieve them; sympathy produces an anxious attention to a thousand little circumstances that may tend to relieve the patient; an attention which money can never purchase, hence the inexpressible comfort of having a friend a physician. Sympathy naturally engages the affection and confidence of a patient which in many cases is of the utmost consequence to his recovery. The patient feels the approach of a man who possesses it, like that of a guardian angel ministering to his relief, while the approach of a rough unfeeling man is like that of an executioner. A certain command of the temper and passions must be natural or acquired to medical men, as sudden emergencies frequently occur in practice, which may flutter the spirits and judgment of the best practitioner, and the weakness and bad behaviour of patients and their attendants are well calculated to ruffle the temper of the mildest individual, and cloud his judgment and make him forget propriety and decency of behaviour; hence the necessity of presence of mind, composure and steadiness.” Let him be remarkable for the humane and liberal exercises of compassionate philosophy.

* O'Meara's Voice from St. Helena.

Dr. Gregory has lucidly described the genius, understanding, temper and qualifications which are required for the duties and office of a physician. He observes "to excel in this profession requires a greater compass of learning than is necessary in any other." This assertion is borne out by the most exalted testimony. Judge Blackstone gave physicians pre-eminence for "general and extensive knowledge." Dr. Johnson was scarcely less favourable in his estimation.— "Whether," he observes "what Temple says be true, that physicians have had more learning than any other faculties, I will not stay to enquire, but I believe every man has found in physicians, great liberality and dignity of sentiment, very prompt effusion of beneficence and willingness to exert a lucrative art where there was no hope of lucre."* The late Dr. Parr, the justly celebrated philologist, remarked "while I allow that peculiar and important advantages arise from the appropriate studies of the three liberal professions, I must confess, that in erudition and science, and in habits of deep and comprehensive thinking, the pre-eminence in some degree must be assigned to physicians."† Rousseau spoke as follows of the faculty:—"Il n' y a pas d'état qui exige plus d'études que leur: par tous les pays ces sont les gens les plus veritablement utiles et savans."‡ It is unnecessary to illustrate this truism by other citations, as it is universally admitted by those capable of judging.

Dr. Gregory considered the obligation to humanity, patience, attention, discretion, secrecy and honor, the moral qualities which should distinguish a medical practitioner. He next described the decorums and attentions incumbent on him which tend to support the dignity of the profession, which included the general propriety of his manners, his behaviour to his patients, and to his brethren. With respect to genius and education necessary to medical men, nothing need be said in this place, the profession is open to every man, and the education is prescribed by the constituted authorities.—

* *Lives of the Poets*, Garth.

† Remarks on the statement of Dr. Charles Coombe, pp. 82, 83.

‡ *Letters*.

As to the other points, it may be fairly stated that there is much room for improvement in this section of the empire.

The following graphic and elegant description of the moral conduct of medical men, is so accurate and so just, that I quote it with much pleasure.

“Nevertheless, anatomical pursuits are neither criminal in themselves, nor yet fraught with dishonour or disrespect to the dead; they outrage no feelings but such as are of a superstitious nature; neither do they in any way deteriorate or brutalize the character of those who pursue them. Insinuations of the latter kind are, indeed, frequently thrown out, but we repel them with meet and honest indignation. We appeal to observation for the truth of our statement, when we assert that society does not present another class of individuals more numerous and respectable than that of the medical profession; and one, at the same time, against the general moral conduct of which so little reproach can be made. There is none, too, possessed of more varied and valuable information. In these respects physic has no occasion to shrink even from a comparison with divinity. With temptations infinitely stronger and more diversified, practitioners in medicine do in no wise cede to the clergy, taken generally, in the morality of their conduct. It ought moreover to be borne in mind, that the very vocation of the latter, by abstracting them from temptation, diminishes the merit attached to the rectitude of their walk. At the same time we need not hesitate to affirm that more benevolent, more truly kind and charitable individuals, than those which have adorned the profession of physic can no where be found. No description of men, whatever their calling or station in life, render such valuable services to the poor and needy sick; none expose themselves to dangers equally numerous and great, without the remotest prospects of pecuniary remuneration. They work silently, yet not the less effectually. They make use of no ostentatious preconization of their good deeds, which are of unsolicited and spontaneous origin; and whilst others are idly preaching the duty of charity, they exemplify it in their daily converse with man. No one is better acquainted with the distresses of po-

verty and sickness than the practitioner; and no one, therefore, can more fully and deeply sympathise with the afflicted. What a bright galaxy of medical philanthropists does history exhibit to us! Of men who have conferred lasting and invaluable blessings on society, who have laboured through evil and through good report, for the benefit of their fellow creatures! And do they not still labour in the same cause? Do they not pursue the same undeviating path of benevolence; gratuitously devoting their time and talents to the indigent sick? We will say nothing of what is privately wrought in this respect; let our public hospitals, our dispensaries, and asylums be consulted; let them speak. There are very few such institutions, in which those who have the care of the soul are not adequately remunerated for their trouble; whilst universally, those who cure the body bestow their time and ability gratuitously. And yet, time is infinitely more precious to the latter, than to the former.

“Again, no body of men in the community can boast of brighter ornaments to science than are to be found amongst the members of the profession of physic. Where shall we find more truly liberal and enlightened philosophers. Individuals, that have more effectually contributed to dissipate error and superstition, or more zealously promoted the general good of mankind? Where, in fine, shall we meet with men who have united higher cultivation of mind with a more truly virtuous nobility of character? It is well known that there are no students at Edinburgh more industrious or better informed than the medical. There is nothing in their lucubrations which exerts a restricting or confining influence on the mind: nothing which *demoralises* or *obtunds* the finer feelings of humanity. The frame of man presents a wide field for observation, in which all may freely expatiate, and on that frame the meditations of the medical philosopher are fixed; not on a system of doctrines calculated to cramp the sinews, or repress the energies of intellect. Medicine imposes no dogmas, requires subscription to no tenets, except such as are obviously written in the grand volume of nature herself.

“We repeat, then, neither in mental nor moral attributes

does the profession of physic yield to that of theology. Let no one imagine we are instituting an invidious comparison, with the intention of exalting the merits of one body in the community, by depreciating those of another. We have no aim but that of evincing the general worth, industry, and acquirements of medical practitioners. We wish to show that the study of anatomy does not exert any baneful influence on their characters; that it does not deprive them of the distinguishing sensibilities of humanity, and thus render them callous to the sufferings of their fellow men. No! they pursue an honourable and dignified vocation, and are urged on in their career by the noble ambition of achieving the utmost possible good. It would be difficult, indeed to point out in society, individuals of a more laborious, persevering, and indefatigable character. At all hours, at the table of repast, on the couch of repose, amid the inclemency of weather, the harass of an anxious mind, and the oppression of bodily fatigue, they must be ready to obey each capricious call! And yet how ill-treated and ill-requited! Patients rigorously exact an assiduous attention; whilst with all *latitude* which may suit their *fancies*, they will *follow* the advice of a medical attendant, yet immediately suspect the extent of his skill, should the amelioration *demanded* not ensue. But this is not all; they even seek at the hands of the law to obtain compensation for any supposed deficiency of skill, to the attainment of which, nevertheless, both themselves and the law are equally opposed!""*

As there is no perfect code of ethics to guide the profession in this country, a succinct detail of the rules of conduct prescribed in the different works of authority may be given, and then the leading points can be fully discussed under separate heads. The following is an imperfect epitome of the ethics of the last century, collected from various sources. To this will be appended the ethical code of the present period.

* Dr. Gordon Thompson's Letter on the Necessity of Anatomical Pursuits, 1830.

CHAPTER III.—*Ethics of the Middle Ages.*

FIRST of all things, a medical man ought to exercise piety, and give due honor to the Supreme Being. Next he ought, to render to every one his due; obedience to his superiors, concord to his equals, and equity to his inferiors. He ought to preserve a clean heart, and silent tongue, and cultivate every virtue. The whole praise of virtue consists in action. He is to avoid anger, and suppress all its perturbations, intemperance and insolence, having always before his eyes, the great deformity of mind produced in those who give way to it, and the amiableness and gracefulness of those who avoid it. Sensuality, intemperance, and dissipation produce concupiscence and carnal gratification, which increase rapidly, and would eventually ruin a medical practitioner. These are to be strenuously avoided, as well as every luxury. Continence consists in moderating pleasure;—gluttony, debauchery, and ignominy, in abusing it. An incontinent or an intemperate man, never rose to eminence, and is completely unfit for medical practice. Men of loose and dissolute habits, and of excursive amours, debase themselves to the rank of the brute creation, and render the mind stupid and inert, and totally unfit for the pursuits of science. Such profligate and abandoned characters cannot be found in the history of the medical profession;—in truth, men so vitiated, could not long pursue the practice of medicine. What man would commit the care of his wife, daughters, or female relatives to a medical practitioner, if such could be found, of so debased and brutal character—to a man burning with desire of violating the conjugal and vestal honours of his neighbour's family. Hence the necessity of practising chastely and honorably, and hence the preference which is given to those members of the profession who have entered into the sacred bonds of matrimony, especially in obstetric practice.* Sadness and fear depress the mind and body,

* Within a recent period, two actions have been brought against medical men for seduction. The annals of medicine, I believe, afford no other examples. The severe censures of the Judges on this breach of professional confidence ought to induce those who regulate medical education to require the study of ethics, and make it indispensable to students.

and unman the practitioner. Fortitude is opposed to sadness and fear, and is often necessary, to enable us to bear patiently, the calumny and contumely, to which no class of men are more exposed than the professors of medicine. All these passions should be expunged from the medical character, and an ardent desire of fame and glory be substituted in their place. Avarice, pride, and envy, are evils which must be carefully avoided. Avarice was considered the chief of all improbity by the ancients, and it is highly cruel in medical men, when it precludes aid from the sick. But those do not consider its cruelty, whose sole object is the accumulation of riches. Well might the poet exclaim—

—Quid non mortalia pectora cogis

Auri sacra fames.

The sick should never want aid on account of pecuniary consideration; and the practitioner ought to be satisfied according to the affluence of the patient. Above all things, pride is to be avoided. It is odious in the sight of God and man, as it excites an inordinate desire of excellences, and induces one to think, that he enjoys from himself all the gifts of nature, talent, intellect, memory, power, and science, which are bestowed on him by the Deity: he despises others, and thinks they are to submit to him, although his superiors; and hence follows his insatiable desire of praise, fame, honor, glory, and reverence, which is but vain glory. Physicians ought never to be guilty of such an error, nor of presumption, ambition, or curiosity. On the contrary, let them display humility without sordidness. Envy at the prosperity or success of another, is an evil which ought not to be named among the profession. An envious man is pusillanimous, of a narrow mind, and abject talent, for he shows, by envying others, that he is inferior to them; he envies what he does not possess, but vehemently desires. Envy is a compound of hatred, dissimulation, avarice, pusillanimity, mendacity, and ambition; and is opposed to friendship, liberality, truth, magnanimity, and prudence. Medical men must avoid this most pernicious evil. All ought to enjoy fortune happily, and no man should be sad at the prosperity of another. Having thus pointed out some of the vices which are to be

avoided by medical men, it is right to enumerate the virtues which they ought to cultivate. These are prudence, circumspection, foresight, caution, perspicacity, continence, sobriety, mildness, modesty, taciturnity, veracity, gravity, magnanimity, liberality, and honesty:—friendship towards acquaintances, affability and civility to strangers, and decorum according to age, sex, and condition. The contrary vices are imprudence, stupidity, precipitation, enmity, cunning, curiosity, and all the excesses of the will, and desire, as irascibility, concupiscence, which are to be avoided by medical men as the most mortal pestilence. About which let them consult the writers on morality, especially Plato, Aristotle, Plutarch, and Seneca; and above all, let them peruse the sacred volume, which will lead to virtue and prudence, from which they will learn how to be good men and prudent practitioners, and to think piously. The conversation is to be moderate and veracious; the morals must be grave, benign and cheerful; the diet temperate and frugal: the apparel respectable and professional; witticisms to be free but few, and to these, may be added the ancient precept,

Mens humilis, studium quærendi, vita quieta,

Scrutinium tacitum, paupertas, terra aliena.

A medical man should be affable and hospitable; friendly to his relations and neighbours, polite to all without any moroseness; he is to relieve the sadness of the suffering patient with placid and mild discourse. Let him not be peevish, but ingenuous, affable, familiar, and enforce his authority without any disdainful gesture. Let nothing fictitious, nothing simulated, be in him, nothing low or base, but let his mind soar with sublimity above all the vicissitudes of fortune. Let the studies of his life be the meditation on the delight and riches of science, virtue, and nobility. Let him shun litigation, and vain popular applause: he ought candidly to praise the good, always avoid detraction, tolerate the bad, indulge the inferior, agree with his equals, and obey his superiors; he is to injure no one; he is to live in the greatest harmony with his family, for this tends to support dignity, and a good reputation; he is to live on the best terms with all, and endeavour to obtain universal esteem. Let him

maintain his opinions with modesty and eloquence, and always with veracity, but without obstinacy. He is not to be proud nor haughty, but cure rich and poor, slaves and free of whatever nation, for medicine is the same to all. He must be careful to observe, that his remedies and directions shall be faithfully exhibited and attended to. *He is to esteem as hidden mysteries whatever is said or done in the house of his patient*, and thus he and his art will acquire more praise. By the observance of these institutes, a medical man will obtain a distinguished place among the wise and good.

The display of a diploma is to be left to jugglers. The greatest cleanliness is necessary; and particular attention to the hands and fingers is requisite. In visiting the sick, let the countenance be meditative, not melancholy nor peevish, which is odious to all. Risibility and hilarity are deemed intolerable, from whence the axiom, "*medicus garrulus ægro-tanti alter morbus.*" His whole gesture is not to be so humble as to excite contempt, nor so proud and arrogant as to excite hatred for him. No perfumery is to be used, but if there be any unpleasant odour in the breath, it is to be corrected, lest the patient have reason to exclaim, "cure thyself." The visits to the sick should not be too frequent nor too rare, twice a day, except in extreme cases, is quite sufficient. Dr. Gregory maintains an opposite opinion, but reason and common sense are against him. Frequent visits are deemed troublesome by some, while they are esteemed angelic visitations by others. They are to be regulated according to the wish of the patient. By gravity and affability we can best learn the nature of disease. In visiting the sick, we should recollect a proper approach, authority, silence, and answers to all inquiries, promptitude in prescribing, that nothing be done precipitately. It is proper to enter the chamber calmly, and not boisterously, not with petulance, noise, garrulity, nor an elated voice, so that in approach, aspect, or any other manner, there can be nothing indecorous. In conversation with the sick, our questions must be grave, plain, and intelligible, without solecisms, pedantry, harshness, not foolishly advising them to be of goodhope; neither

are we to condemn the former errors of life too severely, which would lead the patient to suppose his case hopeless. The sick are pusillanimous and suspicious, and many medical men are so imprudent and loquacious, that they express their opinion openly, rendering the sick melancholy and timorous, who fear that which is related is their own condition. We should be extremely cautious in our expressions, and duly consider what is proper to be said to the sick and the attendants; and enforce with mildness and confidence the necessity of obeying all directions and injunctions, and of faithfully administering the remedies prescribed. In this way the sick can never be alarmed, and we have the best chance of success from the due exhibition of medicines. Some men are harsh and overbearing to the sick, and others too accommodating and flattering; both err exceedingly. Humanity, moderation, and suavity are indispensable, because, unless the patient looks on his physician almost in the light of a deity, he will never obey his precepts. Therefore, let him be careful of his appearance, voice, manners, and actions, if he wish compliance with his precepts. These requisites captivate society in every rank and condition.

On entering the patient's chamber, a medical man is recommended to fix his eyes on the floor, or prudently on the countenance of the sufferer, politely to salute the attendants and patient; and then he is patiently to inquire of all, the age, temperament, habit, constitution, symptoms, and causes of the present illness; and he is also to recollect the season and state of the weather. All these things were comprehended in a single distich by the ancients—

Ars, ætas, forma, complexio, virtus.

Mos et symptoma, repletio, tempus et usus.

After he shall have patiently heard the complaints and narration of the patient; and the narration, however garrulous, of the attendants, he should consider the state of the apartment, the ventilation, warmth, moisture, and so on. He is next to learn the order of symptoms, and examine the state of the cerebral, respiratory, circulatory, and assimilatory functions. The countenance, tongue, respiration, and pulse, are to be examined; the condition of the bowels and urinary

secretion ascertained and the state of the uterine evacuation in females. He is to inspect all the egesta, expectoration, alvine, uterine and urinary discharges. If these things be well observed, you will explain the feelings and state of the patient better than he can do himself; and therefore, he will admire and proclaim your skill and excellence and will repose more confidence in your opinion. The confidence of the patient is often a more certain cure, than can be accomplished by the practitioner and his medicines. In prognosticating the event to attendants and friends of the sick, we must duly consider his former and present condition: and only predict those things which we know must eventually happen. Thus they will perceive that you are not the cause of death, should it occur, but of health, should it be restored. It is from prognosis the world extols a physician, and celebrates his name with utility and honour. In prescribing remedies, it is necessary to inquire the form which the patient prefers. In this, as in all other desires, which are not injurious, he is to be gratified; and all are to be made as palatable as possible. In some cases the parent must persuade the child, and the child the parents, or one friend another, to take certain remedies. There is no objection to this, on the contrary, we must avail ourselves of it as an auxiliary, or life may be sacrificed. In many diseases the sick must be kept tranquil, and all visitors excluded. In this injunction we must be peremptory, and no one can be so unreasonable as to require admittance, at the risk of destroying the life of the patient. Some patients are exceedingly sad and melancholy, and these must be preserved from the visits of all who would further afflict them. The intemperate zeal of the clergy, when there is no necessity for their interference, is often fatal to the patient. Every remedy sanctioned by the major part of the faculty must be faithfully employed. Too much medicine is highly injurious to the constitution; and disease can often be cured as well without, as with medicines. Those whom nature cures, are injured by medicines. Administer nothing timorously or rashly, and never change medicine without having given it a fair trial. A man who is

constantly changing his remedies will not possess the confidence of his patient, because he affords strong evidence that he is ignorant of the means of cure. Cleanliness, ventilation, and regulation of temperature in the sick chamber, are as valuable as medicines. Should the disease be incurable, and prove fatal, the medical attendant may pay a visit of condolence to the relatives, which is always looked on as a proof of his sincerity and friendship. In some cases he may opportunely mention patients whom he had cured of a disease similar to that under treatment; if his patients were the friends or acquaintances of the sufferer, so much the better; he serves the sick by inspiring confidence, and also serves his own reputation. If spoken to about compensation for his attendance, he should declare that the recovery of the patient was his chief concern; but in many cases he must stipulate for his fees, or he will be cheated. This may be done through the friends and attendants, but not with the patient, unless required by himself. A medical man should be affable to all, but not too familiar with any, especially with the illiterate, and his conversation should be always dignified and reserved.

A physician should be always ambiguous in his prognosis, unless the most certain and infallible indications of health, or death be manifest. He is to be moderate in his promises, and always rather pronounce a hope of recovery, than certain death. If a patient be deserted, and afterwards recover by nature or chance, which often happens, the practitioner will incur much infamy. But if he had afforded a hope of health, and death occur, the ignominy is not so great, because many errors and excess may take place, or even a new disease; and the commutation is much easier from health to death, than from death to health, which in the course of nature is almost impossible. A medical man should not interfere in recommending the patient to make a will, it is the strongest proof of despair, and a matter with which he has no concern. If he see necessity, he ought to apprise the friends or attendants, and let them advise the patient to arrange his affairs, in order to prevent disputes and litigation among the heirs. Even this requires great caution, for most

probably other aid will be had, and should the patient ultimately recover, it will be with the greatest disgrace to the first attendant. The friends, relatives, or clergy, are the most proper persons to advise the patient to arrange his affairs; but if the medical man be present, he with a composed countenance, mixed with sincere hope, is to console the patient, and tell him, that the making of a will cannot affect his recovery, for many have done so, who have recovered and lived for many years, or are now in existence. Health or recovery ought never to be promised, lest it offend the Deity, who alone can decide the fate of the patient: if the healthy and robust be uncertain of to-morrow, how much less can the diseased and infirm. In making promises, many natural and auxiliary causes are to be considered, the compliance and obedience of the sick, the diligent application of remedies, and the sudden and unaccountable changes of diseases. How powerful the first aphorism of Hippocrates, "*judicium difficile*."

Plato, Hippocrates, and Galen, maintained, that "medical men were justified in deceiving the sick for the cause of health." They held statesmen and physicians excusable for this breach of ethics, but no other class of society. The Christian religion, however, is opposed to mendacity in any circumstance. To the physician, deception is almost necessary, because his patients are often timid, suspicious, and observant of his words and aspect, and drawing unfavourable conclusions from his very appearance. David, in order to escape from King Achish, changed his dress, and simulated insanity. A tone, a word, a look, will destroy life in delicate and dangerous cases. How often must we disguise medicine, in order to conquer the aversion, and idiosyncrasy of the sick. But mendacity is an evil by which we misrepresent the order of the Creator and of nature. We express not that which we think. We are not to do evil, that good may follow. Yet Abraham said he was his wife's brother; Jacob said to his father, he was Esau, his eldest son, and the midwives of Egypt said they had sacrificed the Hebrew infants, a murderous injunction, for the breach of which they were justly commended. Officious mendacity is less pernicious than that

which is malicious. We must never promise recovery, without premising that it depends on the Divine will, on the due performance of all medical precepts, both by the patient and his ordinary attendants; and even then we must pronounce our prognosis with the greatest caution. The learned physician will bear in mind the great influence of change of weather on the human body; and the many changes a disease of the most favourable aspect may assume.

A few words may be said on the duties of the sick, and their ordinary attendants during the cure of disease.

Hippocrates laid down in his first aphorism, that the physician should not only excel in the due exercise of the best of his skill, but also direct his attention to the conduct of the patient and his attendants, as well as to all extraneous affairs. He said, the medical art consisted in three things, in disease, in the sick, and in the physician, the minister of nature and art. We cannot cure disease, unless the patient assist us. If he refuse remedies, the disease must in general remain, or prove fatal. Hence, the mortality of violent maniacal patients; the assistants are the minor order of medical men and domestics; and the physician must be acquainted with all their duties. Thus, Galen was of opinion, that he must be conversant with pharmacy, venesection, obstetrics, or midwifery, culinary affairs, and even menial servitude. Thus qualified, he can discover artifice, amend, and avoid it. The ordinary attendants should be chosen from those who are acquainted with the patient, and are most likely to pay implicit obedience to the medical directions, and who are accustomed to wait on the sick. They are to report all the symptoms at the next visit, and preserve the apartment in the best order. They are to amuse the sick with cheerful conversation, and never indulge in frightful or ominous narrations; they are to preserve all the egesta, sputa, alvine and urinary discharges, and whatever is rejected from the stomach, or is passed by hæmorrhage. Of all things they must avoid quackery, and never administer either diet or medicine, unless that which has been prescribed. They must not indulge in the use of ardent or inebriating liquors; they must avoid informing the patient

of any thing that may distress him; they must not exhibit any of their own food or drink to the sick; and, in order to compel them to comply with their duties, a faithful servant may attend with them. They should not divulge any thing they may see or hear, but adopt the old adage—"Hear and see, and say nothing." Let the young physician duly consider, how much the event of the disease depends on the proper performance of the duties of nurses; and he will be very cautious in his prognosis.

This precept is to be chiefly observed by medical men, never to visit a patient unless requested to do so. Should he do so, he renders himself liable to be suspected of ambition or of avarice. If one go unsolicited, he may be certain he shall not have the confidence of the sick, and will be deemed indigent and necessitous; and he cannot expect any reward for his spontaneous visitation. If known to the sick, he will be despised for his intrusion; if unknown, his conduct will be suspected. A visit unsolicited is not only useless and indecent, but suspicious. Another medical man may be already in attendance, and will view any intrusion as highly unprofessional. The only exception to this conduct, is when we visit a friend, but even then we are to come as friends, and not in a professional capacity. Again, a patient might be alarmed at seeing a strange practitioner, having one in whom he reposes all confidence, already in attendance. It is also derogatory to the dignity of the profession, to be called in, through the persuasion of nurses and others. Attendance, even on friends, must not be given, unless regularly requested. It is also improper to visit a patient at the request of a relative, unless the person affected, if rational, concur in the request.

There are some avaricious and eccentric men, who refuse medical aid, because it is expensive, but their friends solicit attendance in the usual way. It may be given, provided due compensation be made the practitioner, but not otherwise. It is exceedingly improper for eminent professional men to give advice gratuitously to the affluent; it is a direct injury to the rising members of the profession. If a relation or contemporary who has quarrelled with a medical man be ill,

ought we to visit him? most certainly, even if he has called in another. A good and generous man will conquer evil with good, not considering the deserts of the patient, but what is right and meet for himself, and to promote the honour and glory of the Deity.

A patient is to be visited once a day in chronic cases, twice in acutè, and oftener in the most acute. After a lapse of forty days, two visits in the week may be sufficient; but in all cases they must be regulated by the patient or his friends. In acute and dangerous cases, the friends are to be informed of the perilous condition of the sufferer, and should they not speak of the next visit, they are to be apprized of its necessity, however painful to the practitioner. After convalescence, attendance may be occasionally given, and a gratuity is not to be refused; but must not be accepted, if the patient declare his restoration to health. In such cases some complimentary visits ought to be made. Medical aid is to be afforded to every human being, friend or foe, native or stranger. A physician should not undertake the cure of himself, his wife, nor his children; his mind and reason will be perturbed, and unfit him for the arduous and difficult treatment of violent disease. A lawyer who pleads his own cause, is said "to have a fool for his client."

Some men suppose if they once pay a physician he is to attend them through a succession of diseases; but who will be imposed on in this manner? Others who pretend friendship, will not call a practitioner, but should he visit them, will enjoy his labour without recompence. This is the conduct of relations very often, and of many towards young practitioners; in such cases attendance ought to be withheld, unless in the regular manner. What other class of society will act without reward? Will the clergy, or lawyers, or military, or kings, or any other class of society act so generously? Surely the labourer is worthy of his wages.

A patient is not to be deserted in the most hopeless condition, for recovery may still happen. Let the practitioner ever recollect the adage "*dum anima est, spes est*," while there is life, there is hope. With respect to consultations, those who form them should be regularly qualified, and only

look forward to the welfare of the patient; and not to fame nor lucre. The sick have a right to select those they please. No medical man is justified in refusing to meet another in consultation, if both be duly educated and qualified, whether in the same university or another. The patient is not to suffer by their disputes, with which he has no concern; the great object of a consultation is the cure or relief of the patient, and not disputation or deliberation. Consultations are highly necessary in dangerous cases, and no man should ever object to them. A remedy may occur to one, which has escaped the recollection of another, "*Et quod tu nescis fortasse novit Ofellus.*" The physician called in should be older and more eminent in the art than the former attendant. It is the duty of the attendant to communicate the history and treatment of the case, that both may consult what may be added to the cure. If a new remedy be proposed, it is to be tried if either of the attendants would use it himself, if afflicted in a similar manner to the patient. A few words may be said on the manner in which a medical man ought to behave on receiving compensation.

It is unnecessary to enumerate the arguments in proof of the justice of rewarding medical men for their labors. An art that is not purchased, is dis-esteemed, therefore the correctness of the axiom,

"*Exige dum dolor est, nam postquam pœna recessit,
Audebit sanus dicere, multa dedi.*"

And of another.

Accipe, dum dolet.

What will not a man give, to one, who liberates him from the greatest danger? Or, is there any one so insane, as to spare his riches, when life is in danger? All that a man possesses, says Job, he will give for his life. Thus Philip, the father of Alexander said to his physician, after he had reduced his dislocated clavicle, "*accipe omnia quæ voles, quando quidem clavem habes.*" Many similar examples might be quoted; for,

"*Medicis in morbus totus promittitur orbis,
Mox fugit a mente medicus, morbo recedente.*"

A physician was said to possess three casts of countenance.

When he converses with the healthy, he displays his ordinary one; when he approaches the sick, labouring under acute and painful disease, he is said to display his angelic one; and when he visits his patient after cure, and seeks compensation, then his aspect is satanic,

“Dum præmia poscit medicus, satan est.”

As health is above all temporal blessings, no one can give an adequate reward for its recovery. Nor has a medical man ever received sufficient compensation for the labors and troubles which he experiences for the calamities and miseries of others, which he makes his own. What can compensate him for the continued anxiety, inconvenience, loss of rest, deprivation of ordinary pleasures, and comforts, which he always experiences? The members of the church and law have time for recreation and amusement; they are not always employed, but the medical man must be ever at his post, his motto is “semper paratus,” for this reason, Dr. Johnson defined the duties of a medical man thus, “a truly melancholy attendance on misery, a mean submission to peevishness, and a continual interruption to rest and pleasure.”* Soranus said, if rewards be given, let them be accepted and not refused; if they be not given, let them not be required; because however much any one can give, is inadequate value for the benefits conferred by medicine.”

The ample and magnificent rewards which were conferred on medical men in ancient ages have been already mentioned.

A question has been discussed in all ages, namely, whether a medical man should be punished for bad practice? The most eminent philosophers and legislators of old, were unanimously of opinion, that the errors of a medical man, if involuntary, should be forgiven. The father of medicine maintained, the only punishment should be his own ignominy. Plato de Republica, says, “quavis medicus, si is, qui ab eo curatur, moritur, invito ipso purus sit secundum legem.” This opinion obtained in all civilized countries.† Pliny, lib. 29. is of the same opinion, “Nulla lex est, quæ puniat

* *Medicé vivere est misere vivere.*

† Not in Great Britain and Ireland, a civil, but not a criminal action, may be instituted for *mala praxis*.

This is also the case in the United States

inscitiam capitalem medicorum, nullum exemplum vindictæ, discunt periculis nostris, et experimenta per mortes agunt, medicoque tantum hominem occidisse summa impunitas est, quando in hac artium sola eveniat, ut unicuique medicum se profitenti statim credatur." Barbarians held an opposite opinion, and punished medical men with death, if they had failed in curing the sick. Manes promised to cure the son of the king of Persia, and having failed, he was ordered to be flayed, which sentence was executed. Zerbus having failed to cure Bassa, the emperor of the Turks, was instantly sabred by the soldiers. The experienced and talented Avenzoar, was thrown into chains for a similar failure. But we must proceed to consider the other duties of professional men.

The medical man must be able to detect simulated diseases. This is most important in many relations to society: he must be careful in exempting persons from civil and all public duties by his certificates; he must never violate truth and honour in the execution of his duties to the state and society; he will also be required to give his evidence in the vast variety of civil criminal cases already mentioned, and in all cases he ought to be remunerated for certificates and loss of time.

CHAP. IV.—ETHICS OF THE PRESENT PERIOD.

"I will never set politicks against ethicks, for true ethicks are but as a handmaid to divinity and religion.—BACON.

It is not easy to conceive the reason why the cultivation of ethics, a matter of primary importance to the success of medical men, in the commencement of their career, should be almost totally neglected in the medical schools of an age so enlightened as the present. The fact is so, however incomprehensible it may appear. It is now the custom to initiate men into the mysteries of medicine, without the slightest allusion to the duties they owe each other or the

public; or to the difficulties to be encountered on the commencement of their practice. Hence arise the frequent misunderstandings, disputes, and improper behaviour of medical men, which are so disreputable and injurious to the dignity and interests of science. From some cause which remains to be explained, the majority of medical professors have excluded the discussion of ethics from their instructions; the faculties of physic and surgery have acted in like manner, so that there is no code of ethical institutes to be referred to, in the daily violations of those high moral principles, which have always characterized the true cultivators of medicine. The moral statutes and obligations which are required by some of our colleges, are so few, and so little known, that they are nearly useless; they are seldom observed, obeyed, or enforced. Indeed the only works we have on the subject are those of Dr. John Gregory and Dr. Percival, but these are not deemed authority, nor are they perused by medical students. The former was published above half a century since; the latter previous to the changes made in the constitution of the profession by recent legislation—and both unsuited to the state of the profession at the present time. There is therefore a fair field for further observations upon the subject.

In the subsequent remarks it will be necessary to describe the present state of the profession, and necessarily to comprehend the condition of every class of practitioners. To execute this task in a satisfactory manner to all parties, is not to be contemplated, as the conduct of all deserves animadversion and censure. Truth, justice, impartiality, and an ardent desire to promote the dignity of my profession, shall guide me in the execution of my subject; and I am confident that I cannot be accused of partiality towards any denomination of the profession. My motto is, "*amicus Socrates, amicus Plato, sed magis amica veritas.*" It is an old adage, that "it is impossible to please all parties;" neither shall I attempt it, nor endeavour to please one party more than another. Here I follow the steps of Dr. Gregory, who fearlessly avowed his determination to expose abuses, whatever might be the animadversions of his contemporaries. "What-

ever opposition," says the editor of the Duties of a Physician, in 1770, "this part of the work may meet with, from those who find their own foibles, or rather vices, censured with a just severity, the ingenuous part of mankind, however, will not fail in bestowing that degree of applause so justly due to its merit. At present, there seems to be a general disposition in mankind to expose to their deserved contempt *those quackish, low, and illiberal artifices*, which have too long disgraced the profession of medicine. It is therefore hoped, that the general spirit will have a remarkable tendency to promote this laudable end; and that it will excite men of influence and of abilities to exert themselves in crushing that arrogance which hath frequently served to cover the ignorance of many practitioners of medicine, by means of which alone they acquire such a share of practice as they are by no means entitled to." The same defects and abuses on which Dr. Gregory animadverted still remain uncorrected, and consequently are deserving of further exposure; in fact they are too glaring to be defended except by those whose personal interests render them insensible to the important advantages of reformation and improvement. A faithful picture of modern medical ethics is certainly much wanted; a comparison of what the profession is and was may be entertaining and instructive to a large majority of readers.

The only works on medical ethics which can be cited, are those of Drs. Gregory and Percival, and to these will be added the oaths required by one or two of our colleges, and the moral statutes sanctioned by them. These must be laid under severe contribution. The first entitled, "Lectures on the Duties and Qualifications of a Physician," has justly received the universal approbation of the profession for more than half a century; and is an excellent abridgement of the maxims of preceding writers, and on many occasions their language is quoted *ipsissimis verbis*. In proof of this assertion, it is only necessary to compare our author's observations with the ethics in the last article, which were translated from a work by Roderic a-Castro, entitled "*Medicus-Politicus sive de officiis Medico-Politicis tractatus, quatuor distinctus libris: in quibus non solum bonorum medicorum mores*

ac virtutes exprimuntur, malorum vero fraudes et imposturæ deteguntur: verum etiam pleraque alia circa novum hoc argumentum utilia atque jucunda exactissime proponuntur. Hamburg. anno c10.10.xiv. 1614." The comments and original views of Dr. G. are, however, numerous and valuable, and will be esteemed so long as medicine shall be cultivated. As his work is almost obsolete, I trust that an analysis of its contents may be presented in a form which cannot fail to meet the eye of the industrious student. His remarks on the dignity and importance of medicine, and on the genius and education required for its proper cultivation, need not be inserted, as these points have been already discussed in a former section. The extracts I shall give do not obviate the necessity of referring to the original work—a production that ought to be in the hands of every practitioner.

Dr. Percival's valuable and truly classic work was re-published in 1803, and completed what Dr. Gregory had omitted. It consisted of the following chapters:—I. On Professional Conduct in Hospital Practice; II. In Private Practice; III. In relation to Apothecaries; and IV. In Cases which require a Knowledge of the Laws; to which were added, a Discourse on Hospital Duties, being the substance of a Sermon preached by the Rev. T. B. Percival, and some valuable notes and illustrations by the author himself. It was his intention to have treated of the powers, privileges, honours, and emoluments of the faculty, an object he did not accomplish. The work was arranged in 1792, as a code of institutes and precepts for the professional conduct of the physicians and surgeons of the Manchester Infirmary, and afterwards extended into a system of Medical Ethics, "in which," says his biographer, "he has drawn a portrait of himself, by tracing, with his own hand, what sort of character a physician ought to be." The work consists of several aphorisms, on which very inappropriate comments have been made by the anonymous editor of the last edition. Of the original opinions of Dr. Percival I shall avail myself; and therefore cannot be considered to interfere with the copyright of the last and worst edition of his work.

In citing the opinions of Dr. Percival and others, I claim

the usual privilege of all writers, to collect and arrange materials from all available sources, which are public property. This privilege is sanctioned by the laws of the country. The valuable observations of two able and distinguished professors of the London University, Dr. A. T. Thomson,* and Dr. Gordon Smith,† on the importance of ethics, shall be laid under contribution, as also the opinions of Sir Astley Cooper, Dr. Baillie, Dr. Parry, and Mr. Brodie. In a word, I shall endeavour to prove that the most eminent members of the profession are the strongest advocates of a branch of education which has been most preposterously overlooked and neglected. Want of leisure precludes me from making sufficient research for the compilation of a complete system of ethics, but I trust I shall be able to accumulate a mass of facts, unequalled in any former publication on the subject,

The following is a condensed detail of Dr. Gregory's opinions on the duties of medical men:—

Physicians, considered as a body of men who live by medicine as a profession, have an interest separate and distinct from the honour of the science. In pursuit of this interest some have acted with candour, with honour, with the ingenuous and liberal manners of gentlemen. Conscious of their own worth, they disdained every artifice, and depended for success on their real merit. But such men are not the most numerous in any profession. Some impelled by necessity, some stimulated by vanity, and others anxious to conceal ignorance, have had recourse to various mean and unworthy arts to raise their importance among the ignorant, who are always the most numerous part of mankind. Some of these arts have been an affectation of mystery in all their writings and conversations relating to their profession; an affectation of knowledge, inscrutable to all, except the adepts of the science; an air of perfect confidence in their own skill and abilities; and a demeanour solemn, contemptuous, and highly expressive of self-sufficiency. These arts, however well they might succeed with the rest of mankind, could not es-

* Tract on Medical Education.

† Analysis of Medical Evidence.

cape the censure of the more judicious, nor elude the ridicule of men of wit and humour. The stage, in particular, has used freedom with the professors of the salutary art; but it is evident, that most of the satire is levelled against the particular notions or manners of individuals, and not against the science itself.

The practice of the healing art affords a vast field for the exercise of humanity. A physician has numberless opportunities of giving that relief to distress, which is not to be purchased with the wealth of India. This, to a benevolent mind, must be one of the greatest pleasures. But, besides the good which a physician has it often in his power to do, in consequence of skill in his profession, there are many occasions that call for his assistance as a man; as a man who feels for the misfortunes of his fellow-creatures. In this respect he has many opportunities of displaying patience, good nature, generosity, compassion, and all the gentler virtues that do honour to human nature. The faculty has often been reproached with hardness of heart, occasioned, as is supposed, by their being so much conversant with human misery. I hope and believe the charge is unjust; for habit may beget a command of temper, and a seeming composure which is often mistaken for absolute insensibility. But, by the way, I must observe, that, when this insensibility is real, it is a misfortune for a physician, as it deprives him of one of the most natural and powerful incitements to exert himself for the relief of his patient. On the other hand, a physician of too much sensibility may be rendered incapable of doing his duty, from anxiety, and excess of sympathy; which cloud his understanding, depress his spirit, and prevent him from acting with that steadiness and vigour, upon which perhaps the life of his patient in a great measure depends.

Though a physician possess that enlarged medical genius already described, yet talents of another kind are necessary. He has not only for an object the improvement of his own mind, but he must study the temper, and struggle with the prejudices of his patient, of his relations, and of the world in general; nay, he must guard himself against the ill offices of those, whose interest interferes with him; and it unfortu-

nately happens, that the only judge of his medical merit are those who have sinister views in concealing or depreciating it. Hence appears the necessity of a physician's having a large share of good sense, and knowledge of the world, as well as medical genius and learning.

Such are the genius and talent required in a physician; but a certain command of the temper and passions, either natural or acquired, must be added, in order to give them their full advantage. Sudden emergencies often occur in practice, and diseases often take unexpected turns, which are apt to flutter the spirits of a man of lively parts and of a warm temper.

Accidents of this kind may affect his judgment in such a manner as to unfit him for discerning what is proper to be done; or if he does perceive it, may nevertheless render him irresolute. Yet such occasions call for the quickest discernment and the steadiest and most resolute conduct; and the more, as the sick so readily take the alarm, when they discover any diffidence in their physician. The weaknesses too and bad behaviour of patients, and a number of little difficulties and contradictions which every physician must encounter in his practice, are apt to ruffle his temper, and consequently to cloud his judgment, and make him forget propriety and decency of behaviour. Hence appears the advantage of a physician's possessing presence of mind, composure, steadiness, and an appearance of resolution, even in cases where, in his own judgment, he is fully sensible of the difficulty.

I come now to mention the moral qualities peculiarly required in the character of a physician. The chief of these is humanity; that sensibility of heart which makes us feel for the distresses of our fellow creatures, and which of consequence incites us in the most powerful manner to relieve them. Sympathy produces an anxious attention to a thousand little circumstances that may tend to relieve the patient; an attention which money can never purchase; hence the inexpressible comfort of having a friend for a physician. Sympathy naturally engages the affection and confidence of a patient, which in many cases is of the utmost consequence to his recovery. If the physician possesses gentleness of

manners, and a compassionate heart, and what Shakspeare so emphatically calls "the milk of human kindness," the patient feels his approach like that of a guardian angel ministering to his relief; while every visit of a physician who is unfeeling, and rough in his manners, makes his heart sick within him, as at the presence of one who comes to pronounce his doom. Men of the most compassionate tempers, by being daily conversant with scenes of distress, acquire, in process of time, that composure and firmness of mind so necessary in the practice of physic. They can feel whatever is amiable in pity, without suffering it to enervate or unman them. Such physicians as are callous to sentiments of humanity, treat this sympathy with ridicule, and represent it either as hypocrisy, or as the indication of a feeble mind. That sympathy is often affected, I am afraid is too true; but this affectation is easily seen through. Real sympathy is never ostentatious; on the contrary, it rather strives to conceal itself. But what most effectually detects this hypocrisy is a physician's different manner of behaving to people in high and people in low life; to those who reward him handsomely, and those who have not the means to do it. A generous and elevated mind is even more shy in expressing sympathy with those of high rank, than with those in humbler life; being jealous of the unworthy construction so usually annexed to it.—The insinuation that a compassionate and feeling heart is commonly accompanied with a weak understanding and a feeble mind, is malignant and false. Experience demonstrates, that a gentle and humane temper, far from being inconsistent with vigour of mind, is its usual attendant; and that rough and blustering manners generally accompany a weak understanding and a mean soul, and are indeed frequently affected by men void of magnanimity and personal courage, in order to conceal their natural defects.

There is a species of good humour different from the sympathy I have been speaking of, which is likewise amiable in a physician. It consists in a certain gentleness and flexibility, which makes him suffer with patience, and even apparent cheerfulness, the many contradictions and disappoint-

ments he is subjected to in his practice. If he is rigid and too minute in his directions about regimen, he may be assured they will not be strictly followed; and if he is severe in his manners, the deviations from his rules will as certainly be concealed from him. The consequence is, that he is kept in ignorance of the true state of his patient; he ascribes to the consequence of the disease, what is merely owing to irregularities in diet, and attributes effects to medicines which were perhaps never taken. The errors which in this way he may be led into are sufficiently obvious, and might easily be prevented by a prudent relaxation of rules that could not well be obeyed. The government of a physician over his patient, should undoubtedly be absolute: but to an absolute government very few patients will submit. A prudent physician should therefore prescribe such laws as though not the best, are yet the best that will be observed; of different evils, he should choose the least; and, at no rate, lose the confidence of his patient, so as to be deceived by him as to his true situation. This indulgence, however, which I am pleading for, must be managed with judgment and discretion; as it is very necessary that a physician should support a proper dignity and authority with his patients, for their sakes as well as his own.

There is a numerous class of patients who put a physician's good nature and patience to a severe trial: those I mean, who suffer under nervous ailments. Although the fears of these patients are generally groundless, yet their sufferings are real; and the disease is as much seated in the constitution as a rheumatism or a dropsy. To treat their complaints with ridicule or neglect, from supposing them the effect of a crazy imagination, is equally cruel and absurd. They generally arise from, or are attended with bodily disorders obvious enough; but supposing them otherwise, still it is the physician's duty to do every thing in his power for the relief of the distressed. Disorders of the imagination may be as properly the object of a physician's attention as those of the body; and surely they are, frequently, of all distresses the greatest, and demand the most tender sympathy; but it requires address and good sense in a physician to manage them

properly. If he seems to treat them slightly, or with unseasonable mirth, the patient is hurt beyond measure; if he is too anxiously attentive to every little circumstance, he feeds the disease. For the patient's sake, therefore, as well as his own, he must endeavour to strike the medium between negligence and ridicule on the one hand, and too much solicitude about every trifling symptom on the other. He may sometimes divert the mind, without seeming to intend it, from its present sufferings, and from its melancholy prospects of the future, by insensibly introducing subjects that are amusing or interesting; and sometimes he may successfully employ a delicate and good-natured pleasantry.

We sometimes see a remarkable difference between the behaviour of a physician at his first setting-out, and afterwards when fully established in reputation and practice.—In the beginning, he is affable, polite, humane, and assiduously attentive to his patients; but afterwards, when he has reaped the fruits of such a behaviour, and finds himself independent, he assumes a very different tone; he becomes haughty, rapacious, and careless, and often somewhat brutal in his manners. Conscious of the ascendancy he has acquired, he acts a despotic part, and takes a most ungenerous advantage of the confidence which people have in his abilities. A physician, by the nature of his profession, has many opportunities of knowing the private characters and concerns of the families in which he is employed. Besides what he may learn from his own observation, he is often admitted to the confidence of those, who perhaps think they owe their life to his care. He sees people in the most disadvantageous circumstances, very different from those in which the world views them;—oppressed with pain, sickness, and low spirits. In these humiliating situations, instead of wonted cheerfulness, evenness of temper, and vigour of mind, he meets with peevishness, impatience, and timidity. Hence it appears how much the characters of individuals, and the credit of families, may sometimes depend on the discretion, secrecy, and honour of a physician. Secrecy is particularly requisite where women are concerned. Independently of the peculiar tenderness with which a woman's character

should be treated, there are certain circumstances of health, which, though in no respect connected with her reputation, every woman, from the natural delicacy of her sex, is anxious to conceal; and, in some cases, the concealment of these circumstances may be of consequence to her health, to her interest, and to her happiness.

Temperance and sobriety are virtues peculiarly required in a physician. In the course of an extensive practice, difficult cases frequently occur, which demand the most vigorous exertion of memory and judgment. I have heard it said of some eminent physicians, that they prescribed as well when drunk as when sober. If there was any truth in this report, it contained a severe reflection against their abilities in their profession. It shewed that they practised by rote, or prescribed for some of the more obvious symptoms, without attending to those nice peculiar circumstances, a knowledge of which constitutes the great difference between a physician who has genius and one who has none. Drunkenness implies a defect in the memory and judgment; implies confusion of thought, perplexity, and unsteadiness; and must therefore unfit a man for every business that requires the lively and vigorous use of his understanding.

An obstinate adherence to an unsuccessful method of treating a disease must be owing to a high degree of self-conceit and a belief in the infallibility of a system. It has been the cause of the death of thousands. Patients ought to be indulged in every thing consistent with their safety; and if they are determined to try an improper or dangerous medicine, a physician should refuse his sanction, but he has no right to complain of his advice not being followed. A physician is often at a loss in speaking to his patients of their real situation, when it is dangerous. A deviation from truth is, in this case, both justifiable and necessary. It often happens that a person is extremely ill, but he may recover if he is not informed of his danger. Again, a man may not have settled his affairs, though the future happiness of his family depends on his making a settlement. In such cases the physician may apprize the friends, and occasionally the patient, of the necessity of the arrangement and disposal

of his property. In all dangerous cases, the real situation of the patient should be communicated to his nearest relatives, as it gives them an opportunity of calling other assistance, if they think it necessary. The patient is not to be deserted when his case is despaired of; it is as much the duty of a physician to alleviate pain, and to smooth the avenues of death, when inevitable, as to cure diseases; his presence and assistance as a friend may be both agreeable and useful where his skill is of no further avail. In some cases we should caution the indiscreet enthusiasts among the clergy against too much zeal, as they often terrify the patient and contribute to shorten a life which might otherwise be saved. Medical men should never involve their patients in private and professional quarrels, in which the sick have no concern. All personal feelings should be forgotten in consultations, the good of the patient ought to be the chief and only consideration. The quarrels of the faculty, when they end in appeals to the public, generally hurt the contending parties, discredit the profession, and expose it to ridicule and contempt. Nothing can justify the refusal to consult but want of temper, nor can such circumstances as the university where a person has taken a degree, "or whether he had any degree at all, justify the refusal." This assertion, I may observe, is at variance with the usages of the profession, though society has sanctioned it. Fellows of the College of Physicians refuse to meet graduates of all the British and foreign universities in consultation, until admitted into the College. But of this hereafter. It becomes young practitioners to be particularly attentive to the propriety of their behaviour when consulting with their seniors. Besides the respect due to age, these are entitled to a particular deference from their longer and more extensive experience.

The revolutions indeed of medical hypotheses and systems are so quick, that an old and a young physician seldom reason in the same way on subjects of their profession; although the difference be sometimes rather apparent than real, when they use only a different language to express sentiments essentially the same. But it generally happens,

that the speculations which principally engage the attention of young physicians, seldom in any degree affect their practice; and therefore, as they are in a great measure foreign to the business, they should never introduce them in medical consultations. They show equal want of sense and good manners, when they wantonly take opportunities of expressing contempt for opinions, as antiquated and exploded, in which their seniors have been educated, and which they hold as firmly established. A little reflection might teach them, that it is not impossible but in the course of a few years, their own most favorite theories may be discovered to be as weak and delusive as those which have gone before them; and this should lead them to consider how sensibly they may be hurt themselves, when they find those idols of their youth attacked by the petulant ridicule of the next generation; when, perhaps they have arrived at a time of life when they have neither abilities nor temper to defend them.

Dr. Gregory defended the necessity of medical men being versed in all the branches of the healing art, and concludes by observing, "Every department of the profession is respectable, when exercised with capacity and integrity. I only contend for an evident truth, either that the different branches should be separately professed, or, if one person will profess all, that he should be regularly educated to, and thoroughly master of all. I am not here adjusting points of precedence, or insinuating the deference due to degrees in medicine. As a doctor's degree can never confer sense, the title alone can never command regard; neither should the want of it deprive any man of the esteem and deference due to real merit. If a surgeon or apothecary has had the education, and acquired the knowledge of a physician, he is a physician to all intents and purposes, whether he has a degree or not, and ought to be respected and treated accordingly. In Great Britain, surgery is a liberal profession. In many parts of it, surgeons or apothecaries are the physicians in ordinary to most families, for which trust they are often well qualified by their education and knowledge; and a physician is only called where a case is difficult, or attended with danger. There are certain limits, however, between the two professions, which ought to be

attended to: as they are established by the customs of the country, and by the rules of their several societies. But a physician, of a candid and liberal spirit, will never take advantage of what a nominal distinction, and certain privileges, give him over other men who, in point of real merit, are his equals; and will feel no superiority, but what arises from superior learning, superior abilities, and more liberal manners. He will despise those distinctions founded in vanity, self-interest, or caprice; and will be careful that the interests of science and mankind shall never be hurt, on his part, by a punctilious adherence to formalities.

Much stress has been laid on the formality of a physician's dress, but there is no reason in preferring one garb to another. In some cases there is great impropriety in having any distinguishing formality in dress and manners.

The attendance should be in proportion to the urgency and danger of the disease. A patient or his friends have a curiosity to know the nature of the medicine prescribed, which it is often very improper to gratify; but other cases occur in which it may be proper to acquaint the patient with the nature of remedies, as the peculiarities of constitution require great attention, both as to the quantity and quality of certain medicines. Such are the chief of the duties of medical men, according to the amiable and revered Dr. Gregory; the observance of which cannot fail to promote the honor and dignity of the profession. He included many minor topics, which need not be recorded at the present period.

There are certain duties belonging to the learned professions which are supreme, and which no individual and no set of men can either, for themselves or their successors, violate, renounce, or neglect, without substantial injustice. These duties, so far as they relate to physicians, are comprised in the oaths required by the Universities, Colleges of Physicians, and in one of the Colleges of Surgeons, in this country. The substance of these oaths is that proposed by Hippocrates nearly 2000 years ago, and the oath was formerly administered in all Universities in which medicine was taught, to those who were created doctors, and to those who were licensed to practise by the Colleges of Physicians. The oath

required by the Edinburgh University is in the following words. After an invocation of the Deity, the graduate pronounces these words: "Tum porro artem medicam caute, caste, probeque exercitaturum, et quoad potero omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum quæ denique inter medendum visa vel audita silere convenit non sine gravi causa vulgaturum. Ita presens spondenti adsit numen." "To practice physic *cautiously, chastely, and honorably*; and faithfully to procure all things conducive to the health of the bodies of the sick; and lastly, never, without great cause, to divulge any thing that ought to be concealed, which may be heard or seen during professional attendance. To this oath let the Deity be witness." I believe no similar oath is required by the Universities of Oxford, Cambridge, Dublin, Glasgow, Aberdeen, or St. Andrew's, or by any of the Colleges of Physicians or Surgeons, except those of London. The Royal College of Physicians requires the following promise from its members, fellows, and licentiates, and prescribes a code of moral statutes:—"You faithfully promise that you will observe the statutes of the College, and that you will promptly discharge all fines imposed on you for the breach thereof, and that you will do every thing in the practice of medicine, for the conservation of health, to the honour of the College, and the utility of the realm." The following are the *Moral and Penal Statutes* of the Royal College of Physicians of London in 1830:—

1. No fellow, candidate, or licentiate shall accuse a fellow, candidate, or licentiate of ignorance or mala praxis of his art, unless before legitimate judges, or before those concerned. If it be known to the president and censors, or the majority of them, that any person shall so act, he shall pay £4, for the first offence, and the fine will be doubled for the second; but if he transgress a third time, and be convicted in the manner mentioned, if he is a fellow or candidate he shall be expelled from our society, or from the order of candidates; and if he is a licentiate he shall pay £10, and we ordain, that licentiates shall be fined a like sum for every similar transgression.

2. No fellow, candidate, or licentiate shall afford medical aid, or prescribe for a patient whom he knows is under the

care of another physician, whether fellow, candidate, or licentiate, and to whom he has not been duly called.

3. If any one be convicted of this vice, besides the known ignominy which we wish him to suffer, he shall be fined £2, by the president and censors.

4. If any one shall bargain with apothecaries for any percentage on prescriptions, if a fellow or candidate, and if convicted in the manner before mentioned, he shall be expelled from the fellowship, or from the order of candidates.

5. If a licentiate, he shall be fined £10, for each offence.

6. Every physician, whether fellow, candidate, or licentiate, shall inscribe his initials, the date of the prescription, and name of the patient, on every prescription, unless some cause intervenes which shall be approved by the president and censors.

7. If many physicians be called to a patient, they are to consult with great modesty, and not without the absence of witnesses unconnected with the affair. Nor shall any one prescribe or insinuate what is to be done, before the sick or attendants, before he has stated his method in consultation. But as medical men have different opinions, so that they cannot agree in the plan of treatment, they are to conduct themselves with the greatest prudence and moderation; the ordinary attendant shall signify to the sick and attendants their dissention, so that it may appear as trifling, and as slightly disagreeable to the patient or his friends as possible.

8. Whoever will not obey these rules of consultation, and be convicted by the president and censors, shall be fined £5.

9. Finally, no physician, fellow, candidate, or licentiate shall consult in the city of London, or within seven miles thereof, unless with a fellow, candidate, or licentiate, under a penalty of £5, as often as convicted by the president and censors, or majority of them.

10. All fines imposed by these statutes must be paid.

It is much to be regretted that the great bulk of the profession,—University graduates in medicine, surgeons, and apothecaries, have no opportunity of being acquainted with these admirable statutes, or have nothing similar to inform them of the etiquette they owe to each other. In printing

these statutes and placing them before the medical public, I hope and trust I may add to the honor and dignity of the profession. The majority of the tenets maintained in them are highly conducive to the fame of every class of medical men; and if duly observed would extinguish that base, unprofessional and gentlemanly behaviour, which of late has characterized too many medical practitioners, and has debased and degraded the profession. The disputes and calumnies of medical men have been so frequent, so violent, so notorious of late, that the character of the profession is lowered in the estimation of the public to a degree unequalled in the history of medicine. Actions against medical men by their contemporaries, or their patients, are now amongst the most frequent in our courts of justice. This degeneracy of the profession is not confined to this country, it extends throughout Europe and has even crossed the Atlantic Ocean; and it arises from the exclusion of medical ethics from the prescribed courses of professional education. This malignant spirit pervades every branch of the healing art, physicians, surgeons, and apothecaries are the most prominent of litigants in our courts of justice. What a falling off is here! If we turn to private practice, we find those uninfluenced by the statutes under consideration, vituperating each other, "by look, gesture, and suspicious silence," and often without any disguise; and the injured individual has no remedy afforded him by the body to which he belongs, and which gravely promises him rights, privileges, immunities, and protection in the discharge of his vocation; his only remedy is an appeal to the laws of his country. But the fact is, our Colleges of Surgeons and Companies of Apothecaries have no power to protect their members; nor is there any country in the world in which the laws relative to the practice of the medical profession are so imperfect and defective as in the British empire.*

But to return to the subject immediately under consideration, I have to detail the oath required by the Royal College of Surgeons in this city, which is as follows:—"You swear that while you shall be a member of the Royal College of Sur-

* We are sorry to admit that Dr. Ryan's remark is equally applicable to this country, or at least to a majority of the states.—*Am. Ed.*

geons in London, you will observe the statutes, bye-laws, ordinances, rules and constitutions thereof; that you will obey every lawful summons issued by order of the court of assistants and examiners of the said college, or of either of them, having no reasonable excuse to the contrary: that you will pay such contributions as shall be legally assessed upon and demanded of you: that you will demean yourself *honourably* in the practice of your profession; and to the utmost of your power maintain the dignity and welfare of the college—So help you God.” It is to be feared that some surgeons forget to demean themselves honorably in the practice of their profession, more especially as their rivals, the apothecaries, or as they are most unclassically denominated “the general practitioners,” are under no such obligation. From the open violation of our laws relative to the practice of medicine, the surgeons act as physicians, and must become apothecaries in self-defence; the apothecaries act as physicians and surgeons, while the chemists and druggists, without any medical education whatever, act as physicians, surgeons and apothecaries; and as to quacks, they are allowed to flourish to an illimitable extent, and to destroy more than the sword, famine and pestilence united. Such is a true picture of the medical profession in the greatest nation upon earth—in a country pre-eminent for literature, the sciences and the arts.—Such is the state of medical practice in England.

But to leave this part of the subject to another opportunity and return to the topic more immediately under consideration. That medical men should practise *cautiously, chastely, and honorably*, and observe strict secrecy in all delicate cases, and in all domestic affairs, which may fall under their notice during professional attendance, is not only consonant to the usage of the profession, but to common sense and justice.—It would be highly improper to divulge the nature of certain diseases, or expose the affairs of families, to gratify idle curiosity, impertinence, or serve the purposes of an interested knave. The law however compels us to violate these principles; and hence the exception in the Edinburg oath, “not to divulge without mighty reasons.” In such cases the vio-

lation or renunciation of our moral and professional duties is compulsory. Chastity and honour are general moral duties, and not peculiarly belonging to any one profession. The duty of *caution* in practice means "care not to expose the sick to any unnecessary danger." The best rule of conduct on this important point, is the simple and comprehensive, religious and moral precept, "do unto others as you would they should do unto you." Whatever the practitioner does or advises to be done, for the good of his patient, and what he would do in his own case, or in the case of those who are dearest to him, if he or they were in the same situation, is not only justifiable on his part, but it is his indispensable duty to do. The patient should have the chance, whether it be 100 to one, or only one in 100 in his favour. Whatever may be the result, the practitioner has the greatest of all consolation—the consciousness of rectitude, "*mens conscia recti*."—This will be his solace, should the case terminate unfavourably, when the vulgar, the ignorant, the envious, the malicious, and the interested, will not fail to blame him for the death of his patient. But if he administered a dangerous medicine, merely to gratify his own curiosity or zeal for science, to ascertain the comparative advantage or disadvantage of some new remedy, either proposed by himself or suggested by others; he is held guilty of a breach of ethics and of a high misdemeanour, and a great breach of trust towards his patient; and if the patient died, I apprehend, he might be severely punished. Medical men have tried the most dangerous experiments upon themselves, from their zeal for science; and even sacrificed their lives, but patients in general have no such zeal for science, no ambition for such a crown of martyrdom, and generally employ and pay their medical attendants for the very opposite purpose. It must be admitted that men who would try experiments upon themselves, would be very apt to try experiments on their patients. It is a melancholy truth, but cannot be denied. The profession however, has always reprobated such conduct, and the medical phrase of reproach and contempt for it, "*corio humano ludere*," to play with the human hide, abundantly testifies in what abomination it has been held by the faculty. It is un-

necessary to dwell upon this point in this age, because all experiments are made upon the inferior animals; and the just reproach entertained by the faculty, in former times, is now inapplicable. But every man of common understanding well knows, that neither physic, nor surgery can be practised without some danger to the sick. It is universally known that many surgical operations are dangerous to life; and that all our most powerful remedies are highly dangerous, and more especially when improperly employed or when they cannot be borne. A safe medicine is often extremely dangerous, from the peculiarity of constitution; and the great and urgent danger in many diseases requires the immediate use of dangerous remedies. It is admitted by the best practitioners, that many remedies are still wanted for the cure of disease, and this want leads us most justifiably and almost inevitably to try new remedies on many occasions; and such experiments are not blameable, for they are necessary: *sic enim medicina orta; subinde aliorum interritu perniciosa discernans a salutaribus*. From these causes, there results much inevitable danger in the practice of physic. From this acknowledged danger, results the important duty of caution in a physician, or care to make the danger as little as possible. Whatever is best for the sick, it is the indispensable duty of a medical man to do for them. It is his duty and obligation, "faithfully to do all things conducive to the health of his patients;" and this is so complete and indefeasible, that it cannot be set aside by any motion whatever. Such is the code of ethics which ought to influence medical men, both in public and private practice; "but it is matter of question," says Dr. Gordon Smith, "whether it has in reality an existence."* This is a truism that cannot be doubted; and yet the rising members of the profession are expected to support the honor and dignity of the faculty, without any rules to guide them, without having heard a single word upon the subject, during their education. Hence the cause of that improper conduct which has degraded the profession to a degree un-

* Analysis of Medical Evidence.

paralleled in the annals of British medicine. I shall not prosecute this subject at present, as it will be more properly considered in my account of the laws relative to the practice of every branch of medicine in this country, and of the constitution of the faculty.

From the preceding brief account of the ethics by which medical men are directed, it is obvious that the profession of medicine is the most noble and disinterested of human avocations. This has been admitted in every age and country, since the foundation of medicine as a science. History attests the fact. It now only remains to apply the noble principles of medical ethics to public and private practice, and here Dr. Percival shall be our guide, but we will endeavour to condense his precepts, without destroying the spirit of their meaning.

CHAP. V.

Of Professional conduct relative to Hospital and other medical charities, and in private practice.

HOSPITAL physicians and surgeons should display tenderness, steadiness, and condescension in enforcing their authority. They should allow the sick to choose their favourite practitioner, or at all events call him into consultation occasionally, and thus ensure the patient's confidence. The feelings and emotions of the sick ought to be regarded as much as in private practice; and the discussion of the nature of their diseases, in their presence, ought to be avoided. Delicacy in female cases, should be ever regarded. Parsimony in prescribing medicine and diet, should never have influence. A discrimination between medical and surgical cases should invariably exist; and new remedies or operations are justifiable under the circumstances already mentioned. The history of every important case should be recorded, and the nature of the disease, the *ratio symptomatum* and *ratio medendi*, should be noted and explained to medical students when they attend. This is the only safe mode of initiation into the healing art, a practice unattended to in all the London hospi-

tals. The medical officers should examine and approve of all medicines, but ought to take no part in the management of the domestic affairs of hospitals, or other public institutions to which they may be attached. They should consult in all dangerous cases, and no capital operation ought to be performed unless sanctioned by the majority of the physicians and surgeons of the institution. The junior physician or surgeon should deliver his opinion first, and the others in the progressive order of their seniority; a majority to be decisive; but if the numbers are equal, the attendant should decide. In mixed cases, the junior surgeon should deliver his opinion first, and his brethren afterwards, according to seniority, and then the junior physician. This is agreeable to the rule "*incipiat junior medicus, concludat senior.*" The attendant is to state the case. The order of seniority may be determined by the date of the admission into the colleges, or appointment to the hospital; due notice should be given of a consultation, and no one should be present but the medical officers, unless with their consent. It is improper to hold consultations on Sunday, or perform operations, unless in cases of urgent necessity. It is improper to have a stated day for operations, as it may cause improper delay or unjustifiable anticipation, "when several operations are to take place in succession, one patient should not have his mind agitated by the knowledge of the sufferings of another. The surgeon should change his apron when besmeared; and the tables or instruments should be freed from all marks of blood, and every thing that may excite terror." Morals and religion must be attended to in hospitals, but all indiscreet zeal is not only injurious in dangerous cases, but even fatal. Intrusion on the religious opinions of the sick is highly improper, and is too often allowed or encouraged in many hospitals. The sick should choose their own clergyman. In many cases it is necessary to advise the patient to make a will, as the inmates of hospitals are often possessed of property, or in expectation of it, and their heirs might lose it.

The relief afforded by hospitals, though they are institutions of the most benevolent kind, is procured with difficulty; patients are admitted only one day in the week, no matter

how dangerous their cases, fees are often required, the sick are removed from their families, the nurses are strangers. These defects are so manifest, that the public have wisely established dispensaries to obviate them. In these establishments medical assistance is obtained with the greatest facility every day; it is afforded to one parent, without removing him from the means of earning support for himself and family, and to the other without withdrawing her from the superintendence of her domestic concerns. Besides the natural affections which every philanthropic mind must wish to see cherished, are reciprocally called into exercise, and strengthened, where the parent is the patient, where the wife becomes the nurse, and the children assistants, and medical aid is rendered more efficacious when the mind is relieved from the anxieties necessarily attendant upon a separation from family, and a removal from home. The early application on the first feelings of indisposition prevents the diffusion of contagious diseases; and pestilence, which once stalked forth, spreading terror and desolation around, is now arrested in its progress, or strangled in its birth; and it is not too much to assert that the general healthiness of the metropolis, and the less frequent recurrence of contagious disorders, are to be in a great measure attributed to their early suppression in the abodes of poverty, by the activity and vigilance of the medical officers of dispensaries. It is also apparent that without the medical assistance thus afforded the poor, the demand on parochial rates would be increased in a very considerable degree, and the medical establishments of every parish would be increased to double their ordinary expenditure.

It is quite contrary to the objects for which hospitals and dispensaries are founded, to render them subservient to those in affluent circumstances, an abuse which exists in every one of them. This is an imposition on charity, and a direct injury to the profession, yet the medical officers connive at it. It is a fact, which cannot be controverted, that a large proportion of the patients admitted into the hospitals, especially of this city, and relieved at dispensaries, are not

real objects of charity, and are often the relatives or personal friends of the governors or subscribers; and thus the junior members of the profession are seriously injured. This abuse exists in every part of the empire, but to a vast extent in this metropolis. I have often remonstrated with my colleagues, and with governors on this impropriety, but the reply was ready, "these things are tolerated in every public institution." Dismissing the subject for the present, I have to allude to the conduct of medical men in the various public situations in which they are placed, in lunatic asylums, prisons, &c. &c. The same principles of conduct should guide them in public and private practice, and these have been amply detailed in the preceding pages. A few observations may be made on points relative to private practice, not hitherto considered.

Punctuality in visits to consultations should be always observed. This was well exemplified by Dr. Baillie, as is related by Sir Henry Hallford, in his observations on his departed friend, delivered at the College over which he presides, "Such was his condescension, that he often incurred great inconvenience to himself by his punctual observance of appointments with the humblest practitioners. In consultation he was candid and liberal in the highest degree; and the physician who called him in never failed to find himself in the same possession of the good opinion of the family, as he was before the circumstances of the case made a consultation necessary."

Consultations, says Dr. Percival, should be promoted, in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice. On such occasions no rivalry or jealousy should be indulged. Candour, probity, and all due respect should be exercised towards the physician or surgeon first engaged; and as he may be presumed to be best acquainted with the patient and with his family, he should deliver all the medical directions agreed upon, though he may not have precedence in seniority or rank. It should be the province, however of the senior physician, first, to propose the necessary questions to the sick, but without excluding his associate from the privilege of

making farther enquiries, to satisfy himself, or to elucidate the case.

As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of another physician or surgeon might be objectionable to the patient, the gentleman of the faculty, whose assistance is required in such cases, should pay only two or three visits; and sedulously guard against all future unsolicited interference. For this consultation a double gratuity may reasonably be expected from the patient, as it will be found to require an extraordinary portion both of time and attention.

In medical practice, it is not an unfrequent occurrence, that a physician is hastily summoned, through the anxiety of the family, or the solicitation of friends, to visit a patient, who is under the regular direction of another physician, to whom notice of this call has not been given. Under such circumstances, no change in the treatment of the sick person should be made, till a previous consultation with the stated physician has taken place, unless the lateness of the hour precludes meeting, or the symptoms of the case are too pressing to admit of delay.

In cases of doubt or danger, the medical man who refuses a consultation, must be extremely arrogant or inhuman, and probably both. The patient has an undoubted right to call as many of the faculty as he pleases, though it is often very difficult to make him understand that he is not the property of his attendant, and that on the contrary, the services of the latter are not his property. In general, consultations are objected to in small towns, where the faculty are obliged to scramble for fame and fortune, and daily bread, and whose rivalships, and disputes, and altercations, too often end in open quarrels and implacable animosities. The sick ought never to suffer by such disputes, and hence we find men who are not on speaking terms, meeting in consultation. It has been a maxim with the faculty that a practitioner of *standing*, a senior, should be called over the ordinary attendant. This rule is often violated, and indeed it is not an easy matter to observe it on many occasions. The late eminent Dr. Gregory, of Edinburgh, has commented with his usual force on this point.—

He says, but mere *standing* or seniority, superadded to the most complete and regular education in the profession, will neither procure confidence from the public, nor success and employment to any person. We are well accustomed to see many juniors surpass, and most deservedly surpass their seniors, perhaps even their own instructors, and leave them so far behind, that, before half their race is run, they can have no farther hopes of success.

Some individuals soon shew by their talents, and the use which they make of them, that they can profit more by seven years of observation and experience, than others could do in the longest life. And very many soon shew that they are incapable of ever improving; from a real natural want of those faculties which would enable them to observe accurately, to compare different observations together, to reason acutely and fairly, and ultimately to draw just and useful practical inferences from what they had observed. Many, not naturally deficient in their intellectual powers, become so from defects or improprieties in their education; especially the want of that general preliminary education which improves the faculties, while it extends the sphere of knowledge, and directs the attention to proper objects. And many more, who have no such excuse either from natural or accidental defects, never improve, and soon shew that they never will, purely by their own fault. They think the knowledge or improvement they had acquired, when they first entered on the exercise of their profession, sufficient for all purposes, or at least for their purpose; they find the effort of attention in observing, comparing, reading, and thinking, too laborious; and, as they flatter themselves it is unnecessary for them, they soon cease to make it.

Of course, all chance of improvement in them is at an end; they grow older and yet grow never the better or wiser. On the contrary, as they often become more negligent, they grow worse in every respect, and really become more ignorant, forasmuch as they acquire no new knowledge, and forget much of what they had formerly learned.

They become a kind of drones, content to do their business in a humdrum workman-like sort of a way; by which they

have the best chance of escaping reflections or censure. Their faults are much more frequently sins of omission than of commission. For once that they do any thing positively and immediately pernicious, they miss, from negligence, or ignorance, or both, an hundred opportunities of doing good. None but those in the secret have any notion how faithfully many physicians and surgeons go on for thirty or forty years, or longer if they live longer, employing, even in the commonest diseases, the remedies which they were taught when young, though useless at best, if not pernicious; how faithfully many great and grave writers have transcribed from their predecessors, from generation to generation, the same frivolous, absurd, or dangerous precepts, the same useless or pernicious prescriptions, and the same silly remarks; how tenaciously many practitioners adhere to old receipts, so extravagantly absurd as to contain perhaps fifty or a hundred ingredients, of which probably not more than three or four are of any use; and how manfully they fight against the introduction of other remedies, the most simple, powerful, and safe; which they reprobate, and will not employ, for no other reason but because they are new.

Men of such talents, characters, and habits, whether physicians or surgeons, can neither improve by experience themselves, nor contribute to the instruction of others, and the improvement of their art. They are peculiarly unfit to practise in an hospital, where, on account of the great number and urgency of the cases to be treated, the greatest extent and accuracy of knowledge, the greatest quickness, precision, and discrimination in applying it, and, in one word, the greatest effort of attention and thought is required. Any deficiencies in them, which in private practice might well have escaped observation and censure, must soon become conspicuous on so public a stage; just like those of a lawyer at the bar; and will not only bring on themselves reproach and contempt, but will in some measure affect the character of the hospital itself. Whatever lessens the confidence of the public in the administration of it, and of the patients who resort to it, in the skill of those to whose care their health and lives are entrusted, tends strongly to frustrate the benevolent

purpose of the institution, and is, in truth, a very great injury to the public. Some men, naturally of good sense, and quick discernment, and active, vigorous minds, who attend accurately to what passes around them, are distinguished even at an early period of life for sagacity, prudence, decision, and quickness in conduct, and a thorough knowledge of the characters of men, and the management of business. They are accordingly respected in the world, and often consulted on nice and difficult occasions by those who are acquainted with them, and who very wisely rely more on the judgment of such men than they would do on their own.

But such men are not the majority of mankind. An infinitely greater number are either so deficient in natural talents, or so culpably negligent in the use they make of them, that they appear to acquire no improvement at all by their experience of men and things. At the age of fifty or sixty, they are a good deal more dull, but not a jot wiser, than they were at twenty-five or thirty. They become as arrant drones in common life as any are in law, or physic, or surgery. No man of sense, who knows them, would ever think of consulting them, or relying on their judgment, in any business whatever, any more than he would think of consulting a lawyer when he was sick, or a physician when he was engaged in a law suit.

A man of such a character never can deserve respect, or confidence, or employment, even in his own profession; and there are many such in law, in physic, in surgery, and in all the employments of life.

It must be unnecessary to enter into serious proofs of the importance of consultations. The mere want of medical assistance, says the distinguished physician whom I have just quoted, is in many cases so bad, as to imply almost certainly very pernicious, if not fatal consequences. In such cases to withhold it voluntarily, would be almost as criminal as to suffer a wretch to perish by withholding food from him. This point being proved, a few words may be said on the utility of numerous consultations. The opinion of Dr. G. is so excellent upon this topic, that it must be quoted. With respect to physicians and surgeons both,

and their patients, it is plain that all the good that can be expected from a consultation may be obtained from one or two, or three, or four, at the utmost, at least as well as from one ten times as numerous ; and I should think it almost as plain, that much of that good may be prevented, and much positive evil done, by a very numerous consultation.

On this point, I presume, without vanity, to know as much as most men. For full half of my life, I have been a professor of physic in the University of Edinburg, during which time consultations have been a great part of my business, to the number certainly of some thousands. Nineteen times out of twenty at least, I have been the youngest physician of the consultation ; and of course, when any written directions were to be given to the patient, have had the honour to put them in writing, to the number, I presume, of two or three hundred at least. I can say with confidence in point of fact, that I never knew any good come of a very numerous consultation ; and I doubt much whether any physician or surgeon of competent experience will give a different account of the result of what he has observed. The conduct of physicians and surgeons, when themselves or any of their families are sick, affords a still better proof and illustration of the same truth, and is indeed supreme and decisive authority with respect to what is useful, or what is useless, or worse than useless, in medical consultations. With us all considerations of economy are out of the question. Bad as we may be thought, we are not such Cannibals as to prey on one another. We may all have, for nothing, to ourselves and our families, as much assistance in point of physic and surgery, as we choose. We feel strongly, that we have not sufficient calmness and firmness to judge and act properly, when the lives of those are at stake in whom we are most tenderly interested : and as to ourselves, when sick, we all know, for it is a long settled point in physic, that every man who doctors himself, has a fool for his patient.

For these reasons we are all accustomed, when ourselves or our families are sick, to ask the assistance, not of all, but of some of our professional brethren. A numerous consultation is a kind of debating society, in which the patient's welfare, which ought to be the only object in view, is nearly for-

gotten. The illustrations of such consultations by Moliere, Le Sage, Fielding, and many others were just, though inapplicable at present. In former times the *odium medicum* was as violent as the *odium theologicum*, matters even went so far that the disputants resorted to arms; but there is little danger of modern theorists taking the field in support of their opinions, though they war with words fully as bitterly as their predecessors.

Great caution should be used by the practitioner called in, as to the character of the former attendant. Dr. Percival has illustrated this point with great ability. Officious interference, in a case under the charge of another, should be carefully avoided. No meddling enquiries should be made concerning the patient; no unnecessary hints given, relative to the nature or treatment of his disorder; nor any selfish conduct pursued, that may directly or indirectly tend to diminish the trust reposed in the physician or surgeon employed. Yet though the character of a professional busy-body, whether from thoughtlessness or craft, is highly reprehensible, there are occasions which not only justify but require a spirited interposition. When artful ignorance grossly imposes on credulity; when neglect puts to hazard an important life; or rashness threatens it with still more imminent danger, a medical neighbour, friend, or relative, apprized of such facts, will justly regard his interference as a duty. But he ought to be careful, that the information on which he acts, is well founded; that his motives are pure and honourable; and that his judgment of the measures pursued is built on experience and practical knowledge, not on speculative or theoretical differences of opinion. The particular circumstances of the case will suggest the most proper mode of conduct. In general, however, a personal and confidential application to the gentlemen of the faculty concerned, should be the first step taken, and afterwards, if necessary, the transaction may be communicated to the patient or to his family.

The dubious state of the English law on the right of apothecaries to demand compensation for their attendance, has given rise to a system injurious to the profession and public, that of prescribing an unnecessary quantity of medicine, and by this

means acting contrary to their own feelings as men of education, and virtually imposing upon the public. They must have some remuneration for loss of time, or how are they to support their families and establishments? Can it be expected, that an apothecary or surgeon apothecary in extensive practice in London, will spend his time in driving from one part of this immense city to the other, without some compensation for his services; and this he is compelled to acquire in the disreputable manner already mentioned. It will be said by physicians and surgeons, that the general practitioners, as they are unclassically denominated, are intruders, and have no legal right to practise medicine and surgery. No doubt they have no legal right to practise physic or surgery,* but it is equally clear that they are patronized and generally employed by the public. The want of such a class of practitioners arose from the exorbitant fee for medical attendance, physicians and surgeons demanding a guinea for every visit or prescription, a sum much more than the majority of society can afford. The junior members of these professions are compelled to make the same demand, and in this way the public to a great extent, are precluded from procuring the advice or attendance of physicians and surgeons. The apothecary becomes the general practitioner, because people will prefer his opinion to their own, and especially as he is considered entitled to no fees. This line of practice has become so general, that some few doctors and a large proportion of surgeons have adopted it. The character of this body of practitioners, however, is naturally less esteemed by the public, as they are compelled to sacrifice reputation to interest, and to subject themselves to the humiliating mortification of being confounded with druggists and chemists, while the legitimate physicians and surgeons regard them as intruders, and treat them with jealousy or contempt. As the law was said to allow no compensation for advice, they were accounted unreasonable when they made a specific charge for attendance; and they were obliged to

* The laws relating to the Medical Profession. By J. W. Willcock, Esq. Barrister at Law. London, 1830.

order an unnecessary quantity of medicine, and charge a high price, to remunerate them for attendance, to the great annoyance of the public, and to the degradation of the profession. From this mode of remunerating general practitioners, which is distressing to the majority of that body, and which is happily at an end by a recent decision of the King's Bench, the sick were obliged to take more medicine than was required for the cure of their disease; and this is still too often the case, when a physician is called in by the attending apothecary. The esteem and veneration entertained for the profession at large are diminished, the medical character is lowered and degraded by this state of things, and the public confidence in the healing art is so much injured of late, that many deprive themselves of its aid altogether. The profession, though brought to a degree of perfection hitherto unequalled, has its dignity and degrees so despicably fallen, that the most illiterate assume and usurp its titles, and the university graduate is almost ashamed to be styled Doctor, since he must share his title in common with the surgeon, the apothecary, the chemist, the druggist, and the nefarious quack. Every man may stile himself Doctor, and impose on the public with impunity. Such is the state of physic in London, in 1830. The English apothecary, however, is as much "sinned against as sinning." He is obliged to receive a medical and surgical education, expend five years in acquiring pharmaceutical knowledge, and undergo examination, before he is legally qualified. He then commences his profession, and has the mortification to discover that any man may usurp his rights, by placing the words, chemist and druggist, over his door. He also learns that his illiterate rival, who has received no medical education, robs him of his real vocation, the composition of medicine, vends drugs at half the price he charges, compounds nearly all physicians' prescriptions, prescribes for the sick; in a word, is physician, surgeon, apothecary, and obstetrician. The Apothecaries' company have the power to prevent all this abuse, if they would only do their duty. In Scotland, the surgeon apothecary must be a licentiate of the Royal College of Surgeons of Edinburgh, and must have received an excellent medical and surgical education.

In Ireland the apothecary is not obliged to receive a medical or surgical education, though he practises every branch of the healing art, and has his peculiar rights infringed on, especially in the remote parts of the country, by his old colleague the grocer.

Under all these circumstances, can it be expected that the regular physician or surgeon ought to meet the general practitioners of this empire, and those who assume the title of such in consultation? The Colleges of Physicians and Surgeons have invariably decided in the negative. If the members of each branch of medicine received the same education, of course there could be no objection to their meeting in consultation; but this has never been the case, and therefore the law and the public have wisely decreed a distinction of medical practitioners, which no class of the faculty can destroy. That it is quite preposterous to attempt it, the recent history of medicine in this country amply testifies. It may be said, that the science and art of medicine are "one and indivisible," and therefore ought to be studied and practised by every member of the profession. Granted, if every man could either comprehend or understand the science and the practice of the healing art, but as yet no man has had the temerity to boast of a perfect knowledge of the subject. Hippocrates, who afforded the best evidence of the most extensive knowledge of the various branches of medicine of any of his successors, candidly acknowledged that he had not arrived at the end of physic. But now-a-days, it is seriously asserted, that every young gentleman of one and twenty, who qualifies at the Apothecaries' Hall, or Royal College of Surgeons, is perfectly acquainted with medicine, and competent to treat all diseases incidental to humanity. Such is the march of intellect of the age. Unfortunately for this assertion, the most eminent members of the profession are of a different opinion. They unanimously maintain that no man, however talented, can be a complete master of the science and practice of medicine in its full acceptation, that every man ought to acquire as much information as possible in all its branches; but that the practice of any one branch is as much as he can undertake with satisfaction to himself, or benefit to mankind.

Such is the received opinion, with respect to practice in the large cities, in which a division of the practice of medicine is universally observed. After all that has been stated on the contrary, there is no instance in the history of the profession, of one individual having produced a good system of physic, surgery, midwifery and pharmacy, much less a complete system. The reason is obvious, any one of these branches is sufficiently extensive to occupy the mind; but a complete knowledge of all is far beyond the limits of the human understanding. If this position be admitted, and where is the well educated physician or surgeon who can deny it, it follows that the division of the medical profession is consonant with reason, common sense, and expediency.

This division however is most valuable to the affluent; and is manifestly injurious to the great mass of society, the middle and lower classes, who are precluded from enjoying the advantages it affords. To supply the wants of these classes, the general practitioners are supposed to be necessary, indeed indispensable, though this is very doubtful when we consider how easily the aid of young physicians and surgeons may be procured, as well as the aid of their seniors at the numerous charitable institutions. But the lowest class of society ought to be enabled to purchase the services of well educated practitioners, and this could be easily accomplished, by regulating fees according to seniority, the fee of the junior being such that all might afford to give it. This plan has been adopted in France and other countries, with the best effects to the profession and the public. The young physicians and surgeons of France, men of the first rate education and talents, some of them the best writers of the day, take fees of one, two, three, five, ten francs, and so on to one or two louis, according to their standing; and this plan does not degrade their characters any more than the subaltern officer or midshipman is degraded by his situation, or the admiral or general by having passed through the lower stations, or the clergy who receive their tithes in proportion to the wealth of individuals. Were the medical profession in this country to follow this example, there would be no inducement to prescribe unnecessary medicines, a great many useless if not dangerous practitioners might be

spared, young physicians and surgeons would be employed, who under the present circumstances have no chance of practice in consequence of requiring fees similar to their seniors, and who must commence their career, after an expensive education, by affording gratuitous advice. The change would elevate the medical character, by removing the temptation to many degrading practices, now too common among all classes of practitioners. Though this regulation of remuneration is not formally adopted by the legal heads of the profession, still it is sanctioned by the majority of physicians and surgeons in this metropolis to a certain extent, as the most eminent accept a fee of half a sovereign for advice at their own houses. This is not generally known, but it is a fact; and many talented young baristers accept a similar fee for chamber advice. The apothecaries' company of Ireland have regulated the fees of the respective grades of their body, apprentices, assistants and licentiates. The apprentice is entitled to half a crown, the assistant to a crown, and the master to ten shillings for each visit, or to a guinea if called up at night. These fees are regularly charged and paid. The price of medicines, draughts, mixtures, pills, boluses, &c. are regulated, and the bills of apothecaries may be taxed at the Hall in Dublin. There is no power given by the Irish Act 34 Geo. 3. to regulate fees, or the price of medicine, but the courts of law have repeatedly decided upon the legality of the proceeding. This is a good hint to the company in this country, whose powers are much more extensive, by the 55th Geo. 3. Besides the decision in the case of *Hendy v Hanson* has established the right of English apothecaries to fees, provided they charge a fair and moderate price for medicines.* The good effects of this decision will be speedily felt by the profession, and in due time by the public. According to the present system the British and Irish apothecary, by whom the medicines prescribed by physicians are presumed to be prepared, is scarcely ever in his shop. The moment he receives his licence he ceases to be an apothecary. From that moment he

* Willcock, op. cit.

considers himself a general practitioner, and regards his business as a secondary pursuit. He procures a school boy as an apprentice, and to him is intrusted the serious and important office of compounding medicines. The most active poisons are placed within his reach, and are at his disposal. That serious accidents, and even the destruction of life occur from this cause, the public prints daily inform us. The fact is, there is no such person as the law styles apothecary in the British dominions. The apothecary prescribes in all cases, he seldom permits a physician to be employed unless he considers the patient past recovery; and the physician called in by the apothecary conceals his mistakes, and often consults him precisely as if he was a regularly educated practitioner. In extreme cases the presence of the physician only serves to hide the blunders, and protect from blame the incompetency of the former attendant, but the physician who is a party to the delusion, can be actuated only by corrupt and mercenary motives. He must also act against his conscience in prescribing or sanctioning much more medicine than is necessary, though it is an axiom, that "the best physician is he who orders the least medicine." The practice of consulting with apothecaries leads to this monstrous state of things, and the majority of apothecaries themselves feel the bad effects of the system, as well as every one else, and would never lend themselves to it, unless actuated by necessity. But the surgeons infringe upon the physicians as well as the apothecaries, and this has been so much felt that the Royal College of Physicians in London, cautioned certain eminent surgeons against the practice; a caution which was despised in the teeth of the law. The fact is, we have the various classes of the medical profession, educated and illiterate, encroaching on the rights and privileges of each other, intrenching beyond the lawful boundaries, violating treaties and engagements, and openly transgressing against the laws. This will appear very obvious, by a reference to the valuable treatise of Mr. Willcock, already quoted. Under such circumstances it is impossible for harmony and good feeling to be cherished by the profession. The want of an esprit de corps, so remarkable in other professions, exposes ours to disrespect and contempt in the eyes of the public.

It would far exceed the limits by which I am circumscribed, were I to attempt to enumerate the defects of the medical profession in this country ; I shall however, attempt to depict the most prominent of them when detailing the laws relating to the practice of medicine. Notwithstanding all the abuses detailed, the finest feelings of our nature actuate us in the discharge of our professional duties. The institutes of our conduct are not exceeded in excellence by those of any other profession. The preceding sketch of ethics attests the fact. To return to the pleasing subject of ethics, we have to enumerate a few other rules which guide the higher orders of the profession, and which were proposed by Dr. Percival.

Whenever a physician or surgeon *officiates* for another, who is sick or absent during any considerable length of time, he should receive the fees accruing from such additional practice ; but if this fraternal act be of short duration, it should be gratuitously performed ; with an observance always of the utmost delicacy towards the interest and character of the professional gentleman, previously connected with the family.

Some general rule should be adopted by the faculty, in every town, relative to the *pecuniary acknowledgments* of their patients ; *and it should be deemed a point of honour to adhere to this rule, with as much steadiness, as varying circumstances will admit.* For it is obvious, that *an average fee, as suited to the general rank of patients,* must be an *inadequate* gratuity from the *rich*, who often require attendance not absolutely necessary ; and yet *too large* to be expected from that *class* of citizens, who would feel a reluctance in calling for assistance, without making some decent and satisfactory retribution.

But in the consideration of fees, let it ever be remembered, that though mean ones from the affluent are both unjust and degrading, yet the characteristic beneficence of the profession is inconsistent with *sordid* views, and *avaricious* rapacity. To a young physician, it is of great importance to have clear and definite ideas of the ends of his profession ; of the means for their attainment ; and of the comparative value and dignity of each. Wealth, rank, and independence, with all the benefits resulting from them, are the primary ends which he holds in view ; and they are interesting, wise,

and laudable. But knowledge, benevolence, and active virtue, the means to be adopted in their acquisition, are of still higher estimation. And he has the privilege and felicity of practising an art, even more intrinsically excellent in its mediate than its ultimate objects. The former, therefore, have a claim to uniform pre-eminence.

Dr. Percival adds in a note ; at a period when empirics and empiricism seem to have prevailed much in Rome, the exorbitant demands of medical practitioners, particularly for certain secret compositions which they dispensed, induced the Emperor Valentinian to ordain, that no individual of the faculty should make an express charge for his attendance on a patient ; nor even avail himself of any promise of remuneration, during the period of sickness ; but that he should rest satisfied with the donative voluntarily offered at the close of his ministration.* By the same law, however, the Emperor provided that one practitioner, at least, should be appointed for each of the fourteen sections into which the Roman metropolis was divided, with special privileges, and a competent salary for his services ; thus, indirectly, yet explicitly acknowledging, that a physician has a full claim in equity, to his professional emoluments. Is it not reasonable, therefore, to conclude, that what subsisted as a *moral right*, ought to have been demandable, under proper regulations, as a *legal right* ? For it seems to be the office of law to recognize and enforce that which natural justice recognizes and sanctions.

The Roman advocates were subject to the like restrictions, and from a similar cause. For their rapacity occasioned the revival of the Cincian ordinance—"qua cavetur antiquitas, ne quis ob causam orandam pecuniam donumve accipiat." But Tacitus relates, that when the subject was brought into discussion before Claudius Cæsar, amongst other arguments in favor of receiving fees, it was forcibly urged *sublati studiorum pretiis, etiam studia peritura* ; and that in consequence the prince "*capiendis pecuniis posuit modum usque ad dena sestertia quæ egressi repetundarum tenerentur.*"†

* Vide Cod. Theodos. Lib. XIII. Tit. III.

† Annal Lib. XI. Pag. 168. Edit. Lipsii.

A precise and invariable *modus*, however, would be injurious both to the barrister and the physician, because the fees of each ought to be measured by the value of his time, the eminence of his character, and by his general rule of practice. This rule, with its antecedents, being well known, a *tacit compact* is established, restrictive on the claims of the practitioner, and binding on the probity of the patient. Law cannot properly, by its ordinances, establish the custom, which will and ought to vary in different situations, and under different circumstances. But a court of judicature, when formally appealed to, seems to be competent to authorise it if just, and to correct it if unjust. Such decisions could not wholly change the honorary nature of fees; because they would continue to be increased, at the discretion of the affluent, according to their liberality and grateful sense of kind attentions; and diminished, at the option of the physician, to those who may from particular circumstances, require his beneficence.

From the Roman code, the established usage, in different countries of Europe, relative to medical fees, has probably originated. This usage, which constitutes common law, seems to require considerable modification to adapt it to the present state of the profession. For the general body of the faculty, especially in the United Kingdoms of Great Britain and Ireland, are held in very high estimation, on account of their liberality, learning, and integrity. And it would be difficult to assign a satisfactory reason why they should be excluded from judicial protection, when the just remuneration of their services is wrongfully withheld. Indeed, a medical practitioner, one especially who is settled in a provincial town, or in the country, may have accumulated claims from long protracted and even expensive attendance; and his pecuniary acknowledgments may be refused from prejudice, from capitiousness, from parsimony, or from dishonesty. Under such circumstances, considerations of benevolence, humanity, and gratitude, are wholly set aside: for when disputes arise, they must be suspended, or extinguished; and the question at issue can only be decided on the principles of commutative justice.

All members of the profession, including apothecaries as

well as physicians and surgeons, together with their wives and children, should be attended gratuitously by any one or more of the faculty, residing near them, whose assistance may be required. For as solicitude obscures the judgment, and is accompanied with timidity and irresolution, medical men, under the pressure of sickness, either as affecting themselves or their families, are peculiarly dependent upon each other. But visits should not be obtruded officiously, as such unmasked civility may give rise to embarrassment, or interfere with that choice, on which confidence depends. Distant members of the faculty, when they request attendance, should be expected to defray the charges of travelling. And if their circumstances be affluent, a pecuniary acknowledgment should not be declined; for no obligation ought to be imposed, which the party would rather compensate than contract.

When a physician attends the wife or child of a member of the faculty, or any person very nearly connected with him, he should manifest peculiar attention to his opinions, and tenderness even to his prejudices. For the dear and important interests which the one has at stake, supersede every consideration of rank or seniority in the other; since the mind of a husband, a father, or a friend, may receive a deep and lasting wound, if the disease terminate fatally, from the adoption of means he could not approve, or the rejection of those he wished to be tried. Under such delicate circumstances, however, a conscientious physician will not lightly sacrifice his judgment; but will urge, with proper confidence, the measures he deems to be expedient, before he leaves the final decision concerning them to his more responsible coadjutor.

Clergymen, who experience the *res augustæ domi*, should be visited gratuitously by the faculty. And this exemption should be an acknowledged rule, that the feeling of individual obligation may be rendered less oppressive. But such of the clergy as are qualified, either from their stipends or fortunes, to make a reasonable remuneration for medical attendance, are not more privileged than any other order of patients. Military or naval subaltern officers, in narrow circumstances, are also proper objects of professional liberality.

As the first consultation by letter, imposes much more

trouble and attention than a personal visit, it is reasonable, on such an occasion, to expect a gratuity of double the usual amount. And this has long been the established practice of many respectable physicians. But a subsequent epistolary correspondence, on the further treatment of the same disorder, may justly be regarded in the light of ordinary attendance, and may be compensated as such, according to the circumstances of the case, or of the patient.

Physicians and surgeons are occasionally requested to furnish certificates, justifying the absence of persons who hold situations of honour and trust in the army, the navy, or the civil departments of government. These testimonials, unless under particular circumstances, should be considered as acts due to the public, and, therefore, not to be compensated by any gratuity. But they should never be given without an accurate and faithful scrutiny into the case; that truth and probity may not be violated, nor the good of the community injured, by the unjust pretences of its servants. The same conduct is to be observed by medical practitioners, when they are solicited to furnish apologies for non-attendance on juries; or to take the valetudinary incapacity of persons appointed to execute the business of constables, churchwardens, or overseers of the poor. No fear of giving umbrage, no view to present or future emolument, nor any motives of friendship, should excite to a false, or even dubious declaration. For the general weal requires that every individual, who is properly qualified, should deem himself obliged to execute, when legally called upon, the juridical and municipal employments of the body politic. And to be accessory, by untruth or prevarication, to the evasion of this duty, is at once a high misdemeanour against social order, and a breach of moral and professional honour.

The use of quack medicines should be discouraged by the faculty, as disgraceful to the profession, injurious to health, and often destructive even of life. Patients, however, under lingering disorders, are sometimes obstinately bent on having recourse to such as they see advertised, or hear recommended, with a boldness and confidence which no intelligent physician dares to adopt, with respect to the means that he pre-

scribes. In these cases, some indulgence seems to be required, to a credulity that is insurmountable. And the patient should neither incur the displeasure of the physician, nor be entirely deserted by him. He may be apprized of the fallacy of his expectations, whilst assured at the same time, that diligent attention should be paid to the process of the experiment he is so unadvisedly making on himself, and the consequent mischiefs, if any, obviated as timely as possible. Certain active preparations, the nature, composition, and effects of which are known, ought not to be prescribed as quack medicines.

Among the various kinds of imposture practised in polished society, quackery has been the most successful, in consequence of the inestimable value justly set on health. It is unnecessary to expatiate on this theme, as it is generally acknowledged. The whole of our medical laws were enacted for the suppression of empiricism, but at no period of our history was it so general as at present. In every other nation in Europe it is suppressed, quack nostrums are prohibited, and it is only in this enlightened country they are tolerated, and blazoned forth as cures for incurable diseases. The Colleges of Physicians possess power to abate this evil, but on this and every other occasion, they have neglected the interests of medical science and the public. They have calmly and heedlessly witnessed the degradation of the profession. The grand secret of the encouragement of quackery is this, that the government derives an immense revenue, at least £100,000 annually, from stamp duty on patent medicines and quack advertisements. During the last session of Parliament, it was admitted that the revenue on patent medicines, in England alone, and exclusive of advertisement duty, which was treble the sum at least, was £30,000 a year. The duty derived from this polluted source in Scotland and Ireland was not stated. The income estimated above, is obviously less than the real amount. How disgraceful to the British pharmacopœias is this state of things, and yet the framers of the pharmaceutical codes are perfectly indifferent about the matter. It would be an insult to the reader, to offer serious proofs of the injury inflicted by unrestrained empiricism, both on the profession and public. We shall dismiss the subject by observing, that quacks are subject to two

years imprisonment in France, or to be sent to the galleys for five years. Again, no man is allowed to practise obstetrics unless duly educated, even midwives must be instructed, and apothecaries must confine themselves to their proper business, compounding medicine.

At the close of every interesting and important case, especially when it has terminated fatally, a physician should trace back, in calm reflection, all the steps which he had taken in the treatment of it. This review of the origin, progress, and conclusion of the malady; of the whole curative plan pursued, and of the particular operation of the several remedies employed, as well as of the doses and periods of time in which they were administered, will furnish the most authentic documents, on which individual experience can be formed. But it is in a moral view that the practice is here recommended, and it should be performed with the most scrupulous impartiality. Let no self deception be permitted in the retrospect; and if errors, either of omission or commission, are discovered, it behoves that they should be brought fairly and fully to the mental view. Regrets may follow, but criminality will thus be obviated. For good intentions, and the imperfection of human skill, which cannot anticipate the knowledge that events alone disclose, will sufficiently justify what is past, provided the failure be made conscientiously subservient to future wisdom and rectitude in professional conduct.

The opportunities which a physician not unfrequently enjoys, of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. And his councils, or even remonstrances, will give satisfaction, not disgust, if they be conducted with politeness; and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

The observance of the Sabbath is a duty to which medical men are bound, so far as is compatible with the urgency of the cases under their charge. Visits may often be made with sufficient convenience and benefit, either before the hours of going to church, or during the intervals of public worship.—And in many chronic ailments, the sick, together with their

attendants, are qualified to participate in the social offices of religion; and should not be induced to forego this important privilege, by the expectation of a call from their physician or surgeon.

A physician who is advancing in years, yet unconscious of any decay in his faculties, may occasionally experience some change in the wonted confidence of his friends. Patients who before trusted solely to his care and skill, may now request that he will join in consultation, perhaps with a younger co-adjutor. It behoves him to admit this change without dissatisfaction or fastidiousness, regarding it as no mark of disrespect; but as the exercise of a just and reasonable privilege in those by whom he is employed. The junior practitioner may well be supposed to have more ardour than he possesses, in the treatment of diseases; to be bolder in the exhibition of new medicines; and disposed to administer old ones, in doses of greater efficacy. And this union of enterprize with caution, and of fervor with coolness, may promote the successful management of a difficult and protracted case. Let the medical parties, therefore, be studious to conduct themselves towards each other with candour and impartiality; co-operating, by mutual concessions, in the benevolent discharge of professional duty.

The commencement of that period of senescence, when it becomes incumbent on a physician to decline the offices of his profession, it is not easy to ascertain; and the decision on so nice a point must be left to the moral discretion of the individual. For, one grown old in the useful and honourable exercise of the healing art, may continue to enjoy, and justly to enjoy, the unabated confidence of the public. And whilst exempt, in a considerable degree, from the privations and infirmities of age, he is under indispensable obligations to apply his knowledge and experience in the most efficient way, to the benefit of mankind. For the possession of powers is a clear indication of the will of our Creator, concerning their practical direction. But in the ordinary course of nature, the bodily and mental vigour must be expected to decay progressively, though perhaps slowly, after the meridian of life is past. As age advances, therefore, a physician should, from time to time, scru-

tinize impartially the state of his faculties; that he may determine, *bona fide*, the precise degree in which he is qualified to execute the active and multifarious offices of his profession.— And whenever he becomes conscious that his memory presents to him, with faintness, those analogies, on which medical reasoning, and the treatment of diseases are founded; that diffidence of the measures to be pursued, perplexes his judgment, that from a deficiency in the acuteness of his senses, he finds himself less able to distinguish signs, or to prognosticate events; he should at once resolve, though others perceive not the changes which have taken place, to sacrifice every consideration of fame or fortune, and to retire from the engagements of business. To the surgeon under similar circumstances, this rule of conduct is still more necessary. For the energy of the understanding often subsists much longer than the quickness of eye-sight, delicacy of touch, and steadiness of hand, which are essential to the skilful performance of operations. Let both the physician and surgeon never forget, that their professions are public trusts, properly rendered lucrative whilst they fulfil them; but which they are bound by honour and probity to relinquish, as soon as they find themselves unequal to the adequate and faithful execution.

[The foregoing code of ethics, embraces most of the rules to be observed by medical men towards each other, as well as towards the patients entrusted to their care. But, however important and valuable they may be, it is impossible to practice them to their full extent, without patients themselves adopting a certain line of conduct towards their professional attendants. A consideration of these may appear foreign to the character of this work, but as it is important that we should be equally aware of the duties we are to expect as of those we are to perform, the following abstract of Dr. Rush's essay on the subject may not appear out of place.

The first duty of a patient is to select no person as his medical adviser, who has not received a regular professional education. In no other trade or occupation do mankind rely on the skill of a self taught artist, whilst in medicine, confessedly the most difficult and intricate of the sciences, the world appears to think that knowledge may be intuitive. That as-

tonishing cures have been performed by quacks, is readily admitted, but these have always been accidental, and the disastrous consequences of their blind ignorance and rash presumption although carefully concealed from the public eye, far outnumber the records of their success. Patients should prefer a physician whose habits of life are regular and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should confine the care of himself and family as much as possible to one physician, for a medical man who has become acquainted with the peculiarities of constitution, habits and predispositions of those he attends, is more likely to be successful in his treatment, than one who sees them for the first time. A patient who has thus selected his physician, should always apply for advice in what appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

Patients should faithfully and unreservedly communicate to their physician the history of the cause of their disease. This is the more important as many diseases of a mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser, he should always bear in mind that a medical man is (or ought to be) under the strongest obligations of secrecy. Even the female sex should never allow feeling of shame or delicacy to prevent their disclosing the seat, symptoms and cause of complaints peculiar to them. However commendable delicacy of mind may be in the common occurrences of life, its strict observance in medicine may often be attended with the most serious consequences, and a patient sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease.—

Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude the details of his business nor the history of his family concerns.

The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drinks and exercise. As patients become convalescent they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self constituted doctors and doctresses who are to be met with in almost every family and who all possess infallible remedies for the cure of every disease. However simple some of their prescriptions may be, it often happens that they contravene the plan of treatment adopted by the physician.

A patient should if possible avoid even the friendly visits of a physician who is not attending him, and when he does, he should never converse with him on the subject of his disease, as an observation may be made without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert, for although each of their modes of treatment may be attended with equal success when employed singly, a union of them is very likely to be productive of disastrous results.

When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing. It is to be lamented that the reverse of this is too common. A family physician is often dismissed with less feeling than a servant or even a horse. To this degradation of his profession, is often added the injury of detracting from his cha-

racter in society, without his having had an opportunity of justifying a real or supposed offence.

Such are the general rules laid down by our illustrious countryman for the behaviour of patients towards their physicians, and an adherence to which would render the performance of their reciprocal duties much more satisfactory. The same author also notices some minor points which should not be passed over in silence. Thus a patient should always send for his physician in the morning, when the first attack of his disease has not been in a subsequent part of the day. By a physician being aware of the visits he has to pay during the day he is able to apportion his time in such a manner as to prevent a clashing of engagements. A patient should avoid calling on a physician unnecessarily during the hours devoted to meals or sleep. A patient should always be in readiness to receive the visits of his physician, as the detention of a few minutes is often of serious inconvenience to him.

But the duties of a patient to the medical profession do not end with his disease, there are others incumbent on him when he recovers. The first is to allow his physician due credit, and not as is too often the case forget his services as soon as there is no longer any occasion for them. The last is to remunerate him properly for these services; the claims of the profession for an adequate compensation for their labours are so clearly and feelingly detailed by Dr. Rush, that we give them entire. "To qualify him for the service he has rendered, he spent his youth in painful, and in some instances, in disgusting studies. He has perhaps visited foreign countries, and either at home or abroad, expended the whole of his patrimonial property in acquiring a knowledge of his profession. To enable him to get into business, he has passed the first seven or ten years of his life in labouring for nothing among the poor, and in deriving from fortuitous business only a bare subsistence. From the deduction of the time that has been mentioned, and from the premature death or old age induced by his labours, the years in which it is possible for him to accumulate property are reduced to a small number. His whole life during these years is one continued stream of labour, self denial, and solicitude." After mentioning that the members of

every other trade and profession have their moments of freedom and relaxation, which are denied to the physician, and that even the close of his life, which most persons are enabled to pass in retirement and comparative affluence, is to him the same scene of labor and anxiety, Dr. Rush depicts in the strongest manner, the peculiarly painful solicitude which is always weighing on his mind for the safety of his patients and goes on to say : “ In mentioning the claims of a physician upon his patient for remuneration, let us not forget the peculiar and specific expenses to which his profession exposes him.—His education places him and his family in the first ranks in society. His business subjects him to the necessity of maintaining an expensive stable and one or two carriages, &c.”

Physicians however do not expect a full equivalent for these sacrifices and services, but it becomes the duty of patients to make a prompt payment of what they do demand ; the debts to a physician are too generally considered as onerous taxes and their liquidation postponed as long as possible ; and it is not a little remarkable that our laws are far more just to medical men in this respect than individuals, as they require that a debt due from the estates of deceased persons for medical services shall be paid from the first available funds.

Before leaving this subject let us claim the attention of the profession to a proposal of the benevolent author we have so largely quoted from. We allude to the formation of a fund for the support of the widows and children of physicians.—This was found impracticable at the time, from the small number of medical men, but now that our ranks are overflowing it can surely be readily effected. It has been put in force in England and with the greatest success, whilst in this country where the death of a physician in almost every instance exposes his wife and children to a sad reverse of fortune, it has never we believe been attempted.]

CHAP. VI.

[Laws relating to the Medical Profession in the United States.]

THE sixth chapter of the original work, for which the following is offered as a substitute, having reference solely to the usages and legal enactments of Great Britain and Ireland, presents therefore matter of but little interest to the American reader; except as a medium for comparing the degree of protection, which has been extended to the medical profession in the respective countries, since they have ceased to exist under the same government; and as that comparison may be the means of suggesting a rule of practice in those instances wherein the system of either may be found incomplete: such parts therefore of Dr. Ryan's Digest, as have any direct bearing upon the points under consideration, will be found under their proper heads in addition to the American text.

The principles whereby medical jurisprudence is regulated in Great Britain, form one entire and general system governing the whole community, and possessing equal authority in all parts of the kingdom; for although many exceptions are observable in the practice under particular customs and statutes, both in Ireland and Scotland, differing somewhat from the customs of England, yet these instances ought rather to be regarded as deviations from a general rule, than parts of a distinct system peculiar to either.

But this doctrine is by no means applicable to the United States. Twenty-four independent sovereignties, each exercising distinct legislative authority within its own territorial limit, yet so linked together by the federal compact as to form but one nation, composed of distinct integers separately governed, as far as regards their internal policy, by their own peculiar laws and usages, presents to the editor of an American system of medical jurisprudence, the labor rather of collecting the legal maxims of a plurality of countries, than of noting the "rule of action" of a single nation.

The exact and faithful performance of this task, is rendered peculiarly difficult, from the necessity of tracing to their source the various principles which in the different portions of

the Union, have been the basis whereon their several judicial structures have been erected. In the majority of the states, from having been originally British colonies, the common law of England as it stood at the period of our revolution, has been generally adopted as the ground work into which, the peculiar system of each has according to its particular exigencies, arising either from national origin, climate, or situation, been interwoven; while in Louisiana until the adoption of Mr. Livingston's code, a system of laws of Spanish origin were the governing principle. In the Floridas under their present territorial organization, the statute law consists of the acts of Congress of the United States; supplied in such instances as are not reached by statute, by a common law peculiar to themselves, being an intermixture of the principles of the common law of England with local customs, originating in old Spanish habits; but the common law is that which is enforced by the courts. When we turn our view to the consideration of how much of the common law of England is in force in the United States, we are compelled to examine the jurisprudence of each particular state. In some of the states, almost the whole of the English common law was received; while in others, but such parts as were immediately applicable to the actual wants of the country were adopted. In Massachusetts, such English statutes as were in force at the time of the emigration of our ancestors from the mother *country, are common law of the state, while in Connecticut and in Pennsylvania, and in most of the other states the rule appears to be, that the common law of England is not conclusive, but may be examined into; and is not to be adopted when it appears contrary to reason or not adapted to local circumstances, the policy of our law,† or simplicity of our practice. Statutory provisions however, have been enacted in a number of the states, whereby some of the leading features of medical jurisprudence are established, and it is on those points only where the subject has been left without such assistance, that we are left to wander in the mazes of the common law.

* 3 Mass. T. R. 59.

† Kirby, 114.

Statutory provisions for the regulation of the practice of Medicine.

The state of Massachusetts appears to have been the first to have legalised the profession of a physician; for we find that in the year 1781, an association, called by the style and title of the Massachusetts Medical Society, was incorporated; with power to regulate the practice of Physic in that state; also to elect from time to time, such physicians as should be deemed worthy of membership, &c., to indicate what course of study was requisite for a medical education, and to examine and license such candidates as should be found qualified to practice.

This example was followed by New-Jersey in 1783, and since that period, similar incorporations have been created in Maine, New-Hampshire, Vermont, Rhode-Island, Connecticut, New-York, Delaware, Maryland, Virginia, South Carolina, Georgia, Mississippi, Alabama, Louisiana, Ohio, Indiana, Illinois, and in the District of Columbia. While in Pennsylvania, North Carolina, Kentucky and Tennessee, the empiric enjoys equal authority with the educated physician.

The powers and authorities exercised by the societies of the several states above enumerated are in general the same, except that some possess greater and more unlimited authority than is granted to others.* The practitioner himself too, in some of the states, enjoys greater advantages than his fellow labourer in less favoured situations. In many instances the physician may maintain his action directly for his fees, while in Pennsylvania he is compelled, like the commonest artisan, to resort to his indelitates assumpsit, for work and labor done.

In Maryland, New-Jersey and New-York,† the unlicensed practitioner, subjects himself to a heavy penalty from the mere fact of his attempt to prescribe as a physician; yet in Penn-

* The acts of 1817, chap. 131; and 1818, chap. 113, Laws of Massachusetts, which provide, that no person shall recover fees, unless duly licensed to practice Physic, extend to physicians residing out of the state in regard to professional services rendered within it. 1 Pick. 33.

† In New-York, every person practising Physic without a license, is subject to a penalty of \$25, unless he proves he practiced gratuitously, or that he administered only roots, bark or herbs, the growth or produce of the United States. 14 Johnson, 369.

sylvania it is only after the mischief arising from conceited ignorance has taken place, that the presuming empiric can be made responsible; the natural consequence whereof is, that Pennsylvania, although boasting of some of the greatest names which adorn the profession; is nevertheless inundated with quacks.

In England the profession is divided into three classes, physicians, surgeons and apothecaries, each division regulated by laws peculiar to itself.

Thus, any person who has not been licensed by the College of Physicians, and who practices medicine in, or within seven miles of London, is liable to a penalty of £5 a month; nor can any one so practice in the country, unless he be a graduate of Oxford or Cambridge, under penalty of misdemeanour. Surgeons must be licensed by the College of Surgeons, and those who practice without such license are liable to the same fine as unlicensed physicians. Apothecaries cannot practice until they have received a license from the Company of Apothecaries, under a penalty of £20. *Administration of medicine gratuitously*, is not a violation of any of the above mentioned statutes, either in the United States or England.

Accoucheurs and Midwives. There does not appear to be any law or restriction, on affording assistance to women in childbed in England or in this country; but it is of course illegal for an unqualified person to treat diseases antecedent to, or consequent upon childbirth, wherever there are laws regulating the medical profession.

Unqualified Apothecaries. The term Apothecary has very different significations in England and the United States: in the former it is applied to a class of the profession who not only vend medicines, but also prescribe; whilst in the United States it is restricted to those who merely sell drugs, and are never considered in the light of practitioners. At the same time it should be noticed, that except in the large towns, the physician like the apothecary in England, also furnishes the medicines he may have prescribed; this arises from the population being so sparse as not to be able to support an apothecary in the small villages. Very few of the states, as far as we have been

able to learn, have laid any restrictions on the vending of drugs. In Georgia however, no apothecary, unless he be a licensed physician, is permitted to vend drugs without a license from the Board of Physicians under a penalty of \$500 for the first offence, and two months imprisonment for the second. The revised statutes of New-York contain a provision which should be adopted in each of our commonwealths: "Every apothecary, or other person who shall sell and deliver, any arsenic, corrosive sublimate, prussic acid, or any other substance or liquid, usually denominated poisonous, without having the word *POISON*, written or printed upon a label attached to the phial, box, or parcel, in which the same is so sold; or who shall sell or deliver, any tartar emetic without having the true name thereof written or printed upon a label attached to the phial, box, or parcel, containing the same, shall upon conviction, be adjudged guilty of a misdemeanor, and shall be punished by a fine not exceeding one hundred dollars.

Malpractice in Medicine. There are three kinds of malpractice.

1. *Wilful Malpractice.*—This includes every case where a physician prescribes a medicine, or performs an operation, which he knows and expects will result in danger or death to the individual under his care. It of course includes the procurement of abortion, except under certain circumstances. In most of the states this is a misdemeanor, or if it results in the death of the mother, a felony. There is only one case in which the premature expulsion of the fœtus is warrantable, and that is, where, from the deformed state of the mother, the infant cannot be born alive at the full period. In this case the operation is performed to save the life of the mother. By the revised statutes of New-York, it is enacted, that, "Every person who shall wilfully administer to any pregnant woman, any medicine, drug, substance, or thing whatsoever; or shall use or employ any instrument or other means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall be necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose; shall upon convic-

tion, be punished by imprisonment in a county jail not more than one year, or by a fine not exceeding five hundred dollars, or by both such fine and imprisonment."

2. *Negligent Malpractice*.—This comprehends those cases where there is no criminal or dishonest object, but gross neglect of that attention which the patient requires. This is a misdemeanour at common law. Under this head also may be included those cases, where a physician administers medicines whilst in a state of intoxication, which shall endanger or destroy the patient. The revised statutes of New-York, provide expressly that the first, shall be counted a misdemeanour, and the latter, manslaughter in the third degree.

3. *Ignorant Malpractice*.—This is, where from the ignorance of the practitioner, injury results to the persons committed to his charge. Here the party injured suffers a private wrong, and may bring an action for damages adequate to the loss he has sustained. As a number of actions of this kind have been brought against practitioners in the different states, it is of importance to ascertain what is to be considered as competent skill on the part of a physician; we therefore give the opinion of Judge Weston, in the case of *Lowell vs. Faxon and Hawks*, as it embraces the clearest view of the subject, that we have met with. "Whoever undertakes to practice physic or surgery, holds out to the public that he possesses a competent degree of medical skill, according to the general state of the medical science in the section of country in which he lives. The degree of professional talent which may be expected, will depend much upon the patronage and encouragement by which it may be fostered and elicited. In large and opulent towns and cities, where physicians and surgeons find extensive employment and ample compensation, competition is invited; and the candidates for public favour in these arts, are stimulated by the most powerful motives in their endeavours to attain professional eminence, and are at the same time aided by many facilities not to be found in more secluded and less favoured situations. The highest degree of skill, therefore, is not to be expected in small towns; where there is little competition and fewer motives for exertion, from the

comparative want of patronage and the limited opportunities afforded for professional improvement."

In an action against a physician for negligent and unskilful conduct in the treatment of the plaintiff, it is necessary that plaintiff should establish positive acts of misconduct.*

Remuneration of Medical Practitioners. In England a physician cannot maintain an action for his fees, for they are honorary and not demandable of right, "and I much doubt," says Lord Kenyon, "whether they themselves would not altogether disclaim such a right as would place them upon a much less respectable footing in society, than that which they at present hold." A surgeon, however, is entitled to recover a reasonable remuneration for his care, attendance, skill, labour, medicines and applications in surgical cases; but not if he put his attendances in the character of a physician. An apothecary may also charge for his attendance, provided he only demands the intrinsic value for his medicines.

In all our states as far as we have been able to ascertain, a physician can maintain an action for services rendered, independent of any medicines furnished, provided that in those states in which there are statutes regulating the profession, he be properly qualified and licensed. In Pennsylvania, where there are no laws against quackery, it is however provided, that when persons die intestate, the physician's bill shall be liquidated from the first available funds.

Protection of Medical Character. It has been decided in England that if a man libel a physician, by saying Dr. —, is a bad one, or employed mala praxis, the slander admits the professional qualification; and legal evidence of his qualification will not be required, Phillips on Evid. v. 2, p. 155. But where the slander denies qualification, legal proof must be given.—Op. cit. 155. This decision we presume will also hold good, in such of the states as recognise the medical profession as a body, and have enacted laws for their government. In Pennsylvania the law of libel, can only protect them in common

* In an action against a physician for negligence and unskilful treatment, plaintiff may introduce evidence of positive acts of misconduct, whereby plaintiff sustained injury. 5 Day, 260.

with other individuals, and damages will be assessed according to the proofs adduced of the libel having injured their practice, or professional reputation.

Civil responsibility of Medical Practitioners. Whenever a physician or other person, publicly professing to cure wounds or other diseases, produces by his want of proper skill or attention, any injury to his patient, an action may be maintained against him; so also an action will lie against a medical practitioner for any ill consequences which may arise from making experiments upon his patients, either in the way of a new manner of treatment of a disease, or by the use of new and untried instruments of surgery; unless by the special authority and permission of the individual who is the subject of the experiment; in like manner an action may be maintained against one who does not make the profession of medicine his business, if the cure be undertaken by his especial agreement: here the action would lie on his special undertaking. An action will also lie against a physician for any injury to the feelings or reputation of his patient, produced by the divulgence of professional secrets, except when given as testimony in a court of competent jurisdiction.

Privileges of Physicians. Physicians and surgeons are in England, exempted by statute 5th, Henry 8th, chap. 6, from serving as jurors; and the same practice prevails in Pennsylvania.

Liability as witnesses. There is no situation in which the medical man finds himself placed, which involves the same degree of responsibility, as when called on as a witness in a court of judicial inquiry. The property, reputation, liberty, nay life itself, of every individual member of the great system of society, may be vindicated and protected, or blasted and destroyed by the fidelity or recklessness of the medical witness: so frequently does the whole question of law hang trembling on the physiological accuracy of the physician. It is him, and to his observation of the infinite variety of symptomatic circumstances, that we are compelled to turn our anxious inquiry, when we would seek to dive into the arcana of nature. Who but the learned can justly discover from the state of the diseased body, what must be, and is the situation of the mind. Who but the unwearied

attendant of the sick man's couch, may pretend to determine the moment when the vital energy of the strongest frame, yielding to the grasp of racking pain, shall unnerve the mind. Who distinguish between the blow that kills, not suddenly, but by unseen injury to delicate organs, and the natural decay of animal functions?

There is a feeling of honorable, but mistaken delicacy, that medical practitioners generally feel, which frequently induces them to refuse the divulgence of what they consider a sacred confidence. The juriconsult anxiously labouring in his professional duty, but from want of physiological knowledge, unable to direct his question so as to derive such information, from the medical witness, as may lead to the explanation of the point at issue; receiving no assistance from the latter, where perhaps a single word or technical expression would at once solve the difficulty, is compelled to vary and repeat his inquiry in so great variety of forms, that the medical man, unaccustomed to the manner of judicial examination, not unfrequently conceives himself insulted; where in point of fact the whole difficulty has originated in his own want of candid explanation. Let me not however, be understood to say, that there is not very frequently, much cause to lament the very improper manner in which medical witnesses, as well as others, are treated at the bar, or that the medical man is alone to blame; the anxiety of critical inquiry will frequently lead the advocate to forget in his earnestness, that respect which is due to the professional character of the witness: it is in such situations that the physician, who is truly bent on the strict performance of his duty, will rise superior to the feelings of anger consequent upon invaded respect, and forget in the agent, the interest he feels in the subject of duty.

A physician must not hesitate when sworn, to divulge every thing within his personal knowledge connected in any manner with the subject matter of the issue joined; he may regret the painful, nay, perhaps indelicate details, which he is compelled to make, but he must remember that he is called upon to utter the truth, the whole truth, and nothing but the truth. Less than the whole truth may perhaps inflict greater injury than even falsehood, and under the third branch of the triple oath

he must recollect that crude and hastily formed opinions and favourite theories, are not included. Physicians generally have considered, that professional secrets were their own property, and the withholding them of their privilege, but it is not so. The privilege which they imagine to exert, is the privilege of the patient and not of the physician; and when, therefore, the necessity of the patient demands its divulgence, ought the depository to hesitate. By the necessity of the patient, I do not simply mean those instances wherein the divulgence or concealment may be useful to himself individually, but whenever and wherein the concealment of the fact would be injurious, or its divulgence beneficial mediately or immediately to the interest of his neighbour as well as to himself. For instance, a murder has been committed, and the individual charged as the offender, stands in such a position before the court, that without the divulgence of a fact known only to the physician in his professional character, the defendant must escape, upon what principle can the physician withhold that fact when summoned as a witness: the defendant is acquitted, and another perhaps, tried, and from the strong evidence of circumstance, convicted of the crime; who then would be guilty of his death? The witness has no right to make himself the judge of evidence.]

CHAP. VII.

Disqualifications for Marriage.

THERE are many bodily imperfections which are not sufficient to deprive married persons of mutual succour. The principal end of conjugal union is the establishment of a contract, by which the parties promise the exchange of mutual succour, and many of the ordinary infirmities are not a sufficient motive to prevent consolation being given by those affected.—Marriage is defined a civil and religious contract between male and female, by which they engage to live together in mutual love and friendship for the purpose of procreation. Some diseases are aggravated by marriage, as inveterate

scrofula, epilepsy, confirmed phthisis ; and as these and other diseases may be communicated to the offspring, they are considered by many as impediments to matrimonial union. Again, rachitis is often transmitted to the infants ; and this rachitic predisposition in the female, predisposes her to spinal and pelvic deformity, and it too often happens in such cases, that the female, the day she hopes to be a mother, is consigned to the tomb. Mania and other forms of mental imbecility, are impediments to the marriage contract. It is necessary for this compact that there should be capacity to contract, and the consent of both parties. The various requisites for conjugal union, are seldom duly considered by society ; in fact, few persons trouble themselves about them. The age, constitution, or health of the parties, are scarcely ever considered, though highly important. All physiologists agree that early or premature procreation is objectionable on many accounts, from the imperfect development of the parties, and the smallness of the pelvis, which exposes the woman to protracted suffering during parturition, and too often to loss of life. It is universally known to all practical obstetricians, that females, who become mothers at an early age, purchase the honour of maternity at a very dear rate. Such persons are liable to numerous disorders during gestation, the pelvis is unable to support the gravid uterus, it is too small for the passage of the infant, consequently parturition will be laborious and protracted, and finally must be completed by artificial means ; while the degree of pressure on the important organs of the pelvis, produced by parturition, causes great suffering and danger to the woman, and may be followed by deplorable disease, or death itself. It is also generally admitted by the most eminent writers, that the present mode of female education is highly injurious to health, predisposes to spinal curvature, and consequently to pelvic deformity, thereby rendering the object of procreation highly dangerous to the victims of them. Writers on spinal diseases have very fully illustrated this position.—Again, great injury is inflicted on the natural development of females, by the custom of tight lacing, the functions of the thoracic and abdominal viscera are impeded, the development of the mammæ and nipples is prevented, these parts are

removed by absorption from pressure, the lactiferous ducts are almost obliterated; the nipple is undeveloped, and therefore lactation is impeded, and the natural food of the offspring greatly diminished. Duges, and other foreign writers, allude to unnatural excitement of the generative organs, and contend that masturbation is the cause of rickets and of various chronic and incurable diseases. In the male sex, it is productive of the worst consequences, and often causes impotence and sterility. The female is unfit for the purpose of procreation until after the twelfth or fourteenth year, or until menstruation is established; for at an earlier age the sexual organs are undeveloped, there is no venereal desire, and sexual intercourse is painful. Hence the cruelty and barbarity of violating female children of tender age, which shall be farther explained in the description of rape.

The male is also incapable of performing his part in the mysterious process of procreation until after puberty, and according to the law of this country before the fourteenth year. He is not qualified to enter into matrimonial engagements until the completion of the twenty-first year.

There is no subject which distresses married persons so much as want of family, or leads to so many domestic feuds or unhappiness, and finally to the nullification of marriage. It is necessary for the medical jurist to be fully informed of all the causes which disqualify both sexes for the object of procreation. All disqualifications for matrimonial union may be divided into two classes; 1, those caused by defect of mental power; 2, those caused by defect of sexual organization.—The disqualifications are therefore moral and physical, and are expressed by the terms impotence and sterility. These terms are often used synonymously, though widely different. Impotence consists in the incapacity for copulation, or in the impossibility of exercising the venereal act; sterility consists in the aptitude of the organs for procreation, without the power of reproduction. Thus a person may be impotent, but not sterile and vice versa. Some writers apply the term impotence to the male, and sterility to the female, but such a distinction is arbitrary and unscientific, the female may be im-

potent from malformation, and the male sterile, from excessive venery. We may observe here, that sterility does not afford a just plea for nullity of marriage. We have now to consider the manifest causes of impotence in both sexes, physical and moral.

Physical, manifest, natural or accidental impotence of the male.

—The causes of manifest impotence of the male, are absence of the penis or testicles. There must be total loss of the penis, as the slightest penetration into the vagina is sufficient for procreation. (Blundell, Richerand, Hurd, in Lond. Med. & Surg. Journ. vol. iv.) The absence of the testicles from the scrotum, is no proof of their non-existence in the abdomen, unless the penis be small, the voice puerile, the beard absent, form delicate, and the whole physical and moral constitution feminine. It is well known that the testicles may not descend into the scrotum, and be fully developed in the abdomen, and perform their functions perfectly, and according to some writers, much better than in the natural situation. The removal of one testicle by castration or disease, is no impediment to procreation. (Astley Cooper. Marc. Dict. des Sc. Med.) When both testicles are diseased, their secretion is injured or destroyed, and impotence is the consequence.—Both testicles may be removed by castration, yet procreation be effected, as the vesiculæ seminales may contain a sufficient quantity of semen for one or two prolific emissions, after which the person will be impotent. But such persons, and also eunuchs, have erection and emission, which consists of the prostratic fluid, the mucus of the seminal vesicles and urethra.

The urethra may open above the pubis in monsters, (Duncan and others,) and in such cases the individual is impotent. Mahon and many other jurists, contended that individuals were impotent who were affected with hypospadias; that is, when the urethra opens through any part of that canal from its orifice to the scrotum. If the opening be so placed that it may enter the vagina, impregnation will follow. Frank relates a case in point. He knew a father so affected, transmit it to his son, and even to three generations. Another indi-

vidual had three sons. Bull. de la Faculte de Medicine, 1810. Morgagni, Petit-Radel, Sabatier, who was hypospadiac, Gauthier and Richerand have observed analogous facts. Dict. de Sc. Med. art Hypospadias.

Sometimes the urethra opens along the dorsum penis; this constitutes epispadias. It is evident that the reasoning employed in the preceding case is applicable to this.

Dimensions of the penis, extraordinary thickness and length, are considered by some writers as causes of impotence. Foderè is of opinion that the respective organs may be so disproportionate, as never to be adapted to each other; and the physical inconveniencies are such as to expose the female to great injury and danger to her health. It must be admitted however, that thickness of the penis, which excites great pain in some women, procures voluptuous sensations in others, and that the vagina is capable of great dilatation, which may be effected by gentle and gradual efforts, and brought to a state capable of receiving the virile member. Though extreme length of the penis may produce contusion of the os and cervix uteri, it cannot be deemed a just cause of impotence, because, by certain precautions, this danger may be avoided, unless there is great difference between the age of parties. Diminutiveness or shortness of the penis is no proof of impotence, for the reasons already stated. Obliquity, tortuosity or bifurcation of the penis, stricture of the urethra, phymosis, paraphymosis, or excessive length of the frænum, cannot be considered absolute causes of impotence, as they can be remedied by surgical operations. Large scrotal herniæ cause recession of the penis, and render coition impracticable; but in some cases relief may be afforded. The same observations apply to large hydrocele. Sarcocèle or scirrhus of testicle does not cause absolute impotence, as it may be removed by operation; and one testicle remaining is sufficient for procreation. The testicles may disappear by disease, (Hamilton, Larrey, Fodère,) or by the use of iodine. Three conditions are necessary on the part of the male for copulation—*erectio et intromissio penis, cum seminis emissionem*. Impotence in men depends on defect of some one or more of these conditions; erection, intromission and ejaculation of the spermatic fluid,

The causes of impotence are more commonly observed in man than in the other sex ; and this is easily accounted for, by the greater part the male has to perform in nuptial congress. This is evident from the phenomena which give the virile member the form and disposition proper for erection, the introduction of the organ, and the ejaculation of the semen, effected by a violent and complicated action, which requires a concurrence of many indispensable conditions, as the organs not only contract spasmodically to effect the expulsion of the male fluid, but all the body participates in this convulsion at the moment of emission, as if nature at this instant forgot every other function. The causes of impotence in man arise from two sources, from malformation of the genitals, or from want of action in them ; but in females, impotence can only depend on malformation, natural or acquired, as the organs have little to do in the act of copulation, they being merely auxiliary to it.

The causes of want of erection may be divided into physical and moral. The physical causes depend on defects of the body, as paralysis of the penis, curvature of the spine, frigid and apathetic temperament. The moral causes are such as act powerfully on the imagination, and suddenly produce an atony of the genitals, or induce an inactivity in organs properly developed. The genital organs, says M. Virey, offer two states during life, in the young and old, which are the frozen zones of existence, the intermediate state is the torrid zone of life. The infant has nothing to give, the old has lost all. This doctrine, though generally correct, admits of exceptions, as children have been precociously developed even before the fourth year, examples of which I have cited in my work on Midwifery ; and our author described a boy, aged seven years, a native of the department of Lot, who was as fully developed as an adult, and who made the most furious attacks on his female acquaintance, and absolutely deprived one of them of that which she could never regain. On the other hand, a Frenchman, aged ninety-nine, married a tenth wife, and was a father at 102, (Bosquet) and Thomas Parr, married at 120, and performed his nuptial duties so well at 140, as to make him forget his old age. He was

even compelled to appear in a white sheet at one of our churches, for an amour, in his 150th year. He outlived nine kings of England. (Elliotson.) But in general, the power of procreation continues from puberty to the 65th year. Immaturity of age, or senescence, may be put down as the first causes of want of power of erection. Among such causes, we must reckon a frigid or apathetic constitution, a total insensibility to sexual desire, and this is said to be an aggravated or profound lymphatic temperament. Descourtiz describes persons of this temperament in these words:—"The hair white, fair and thin, no beard, countenance pale, flesh soft and without hair, voice clear, sharp and piercing, the eyes sorrowful and dull, the form round, shoulders strait, perspiration acid, testicles small, withered, pendulous and soft, the spermatic cords small, the scrotum flaccid, the gland of the testicles insensible, no capillary growth on the pubes, a moral apathy, pusillanimity and fear on the least occasion, are symptoms of anaphrodisia, or impotence, or sterility; and any one having the majority of these signs is incapable of copulation or generation." Propositions sur l'Anaphrosidie.

A habitude of chastity is another opponent to erection, such as in the ancient fathers of the desert, and in those, who by fasting and other forms of church discipline, extinguish those feelings implanted by nature, but in their opinion contrary to that purity which should distinguish those who have made vows of chastity. The organs of such persons decay like all corporeal organs, whose functions are not exerted. Long continued debauchery will cause impotence, whether with women or by masturbation. Every practitioner has met with cases of both these kinds. The impotence, says Pinel, caused by the latter excess, reduces youth to the nullity of premature old age, and is too often incurable. Drs. Gregory and Parry have forcibly commented upon this baneful habit, as also many other distinguished writers. Long watching, great mental or corporeal fatigue, want of nutriment, excessive evacuations, of blood, bile, fæces, saliva, menses, scorbutic cachexia, marasmus, peripneumony, hydrothorax, anasarca, malignant fevers, diseases of the brain and spinal marrow, whether from external injuries or poisons, and numerous other dis-

eases, are temporary causes of impotence. Sexual desire is suppressed by acute diseases, and returns after convalescence. Zacchias and Beck relate numerous cases in proof of this position. We see this further illustrated during the convalescence after fevers, when erection often occurs. Some diseases stimulate the generative organs, as calculus in the kidneys or bladder, gout, rheumatism, hæmorrhoids, leprosy, and other cutaneous affections. Excessive venery is a frequent cause of want of erection and impotence. I have been consulted in numerous cases of this description, especially after marriage. And this is a frequent cause of want of family in young married persons.

The abuses of narcotics, saline refrigerants, acids, acid fruits, iodine, camphor and nitre, are causes of impotence.* Of all causes cold is the most powerful. Thus in the Polar regions, there is neither love nor jealousy.

Moral Causes.—There are no facts which so evidently prove the influence of the moral over the physical state of man, as the phenomena of erection. A lascivious idea will arise in the midst of our gravest meditations, the virile organ will answer its appeal, and will become erected, and fit for the functions which nature has confided to it. But another thought arising, will instantaneously extinguish with the most frigid indifference, all our amorous transports.

This statement is well exemplified by the effects of the passions. Chagrin, inquietude, and debilitating passions, prostrate the whole economy; jealousy, and profound meditations, impede the faculty of procreation. Thus at the very moment when enjoyment is about to be commenced, too eager desire, the trouble which seizes on too ardent an imagination, the excess of love, the fear of not being loved, timidity, respect, doubt of capability, the fear of being surprised, the shame of excessive modesty, or being in the presence of witnesses, antipathy, the sudden knowledge of some physical defect in the female, aversion from filth, odour, and pre-occupations of the mind, are sufficient to oppose erection, and to abate it most

* Dr. Francis states that the abuse of mercury, and the excessive application of lead injections in Gonorrhœa, have caused impotence. Beck v. 1. p. 50.—Am. Ed.

suddenly. But who can enumerate all the moral causes capable of impeding or destroying erection? A sigh, doubtfully interpreted, a recollection, an equivocal word, are sufficient to destroy the illusion, and congeal the most violent passion. A newly married man has become suddenly impotent, on discovering his bride was without a hymen; and a debauchee has as suddenly become anaphrodisiac, on finding the membrane perfect. (*Dict. des Sc. Medicales.*) And thus with a literary man, a philosopher, or those who have a ruling idea, which excites the brain more than the sexual organs. The fear of being impotent is the most frequent and powerful cause of this condition. Thus the cases related by the immortal Hunter, and the absurd impressions of former times as to the influence of his Satanic majesty, and his worthy colleagues the witches. Men supposed there was no physical power when the moral state had consumed their desires, and they were impotent, as long as they supposed themselves so. Such is the power of the moral over the physical state of man. How many impotent persons of this class were cured with bread pills by Hunter; and how many are annually cured by mere placebos? In remote ages, men allowed the illusions of the imagination to have a most extraordinary power over their minds and bodies.—This was most remarkable in the subject before us.

Thus we cannot easily comprehend how the power of rue, or St. John's wort, could prevent a man properly developed, from performing his nuptial duties, on his bridal day; nor how the pronunciation of a few obscure and unintelligible words could have a similar effect. These words were to be written on paper with the blood of a bat, sewn up with a needle, which was used in making the shrouds of the dead, and then the charm was to be tied round the neck of the new married man. (*Venette—also, les Secrets du Petit Albert.*) To cure these enchantments, the church prescribed prayers, and the doctors physic. Mr. Hunter's plan was best. He ordered timid bridegrooms to refrain from any venereal combats for a week, no matter what might be their desires, and then to try their prowess. This cure was effectual, and many of his patients succeeded sufficiently to remove all unfavorable impressions of impotence ever afterwards. They casually took some mild

form of medicine, and a few drops of tincture of opium each night, during the period of preparation.

Impotence natural, manifest or accidental in women.—It has been long held, I think erroneously, that the generative organs of the female are more complicated than those of the male; and therefore, that the causes of impotence are more numerous and less apparent in the other sex. If we examine the genital organs of both sexes anatomically, we will find them equally complicated, and possessing an equal adaption or arrangement of parts, as well as an identity of structure. Thus we find the structure of the penis, very similar to that of the genital fissure and vagina, the doublefold of prepuce, the cavernous structure, its performance of a part of the genito-urinary functions, the openings of the vesiculæ seminales and uterine tubes, the vesiculæ seminales and uterus, the testes and ovaries, the spermatic cords and the uterine tubes. We also find the diseases of one sex as numerous as those of the other, and those who doubt the assertion, need only refer to the works of Chopart, Titley, and others, on diseases of the genito-urinary organs of the male, for ample proof of the position. I need scarcely observe, that diseases of the vasa deferentia, vesiculæ seminales, the pressure of tumours, hydatids, &c. on these parts, diseases of the prostate gland, urinary calculi, diseases of the urethra, fistulæ in perineo, diseases of the bladder, penis and scrotum will be found as numerous as those of the generative system of the other sex. Besides, it would be inconsistent with the wisdom and beneficence of Providence, that one sex should have more to do in the perpetuation of the species than the other.

The causes of impotence in woman, are malformations or diseases of the organs subservient to procreation. Some of these causes are apparent, others obscure. The apparent causes are obliteration of the external sexual organs, both soft and hard, absence of the vagina and uterus, and great deformity of the pelvis, with numerous diseases of the external and internal genitals. The vagina and uterus have been found to consist of a dense fleshy substance, (Morgagni, Mott, Fodéré) and the vagina has been partially closed by such substance, (Pare, Ruysch, Fabricius, Physick, Fodéré.) In my

work on Midwifery, I have said, "the vagina may be absent, (Haller, Vicq. d' Azyr. Journ. des Scavans, Boyer, Caillot, and Willaume,) unusually small, impervious from adhesion, tumours, or a frænum passing above the hymen, or it may be filled with a fleshy growth. If too narrow, it may be dilated with a bougie or a tent sponge, and when unattended to, must be divided by incision, to admit the passage of the infant. It has closed up after conception. There is sometimes a great congenital confusion of parts, so much so, that it would be tedious, if not impossible, to describe them. In cases of extreme narrowness, impregnation may take place, and the canal be gradually dilated during parturition. I have seen four cases of cohesion of the labia externa, at the age of puberty, so complete, that only a small probe could be introduced at the superior commissure. The vaginal canal may be totally or partially obliterated, and in such cases an operation is impracticable, and impotence absolute." The vagina has opened into the bladder, (Sue) rectum, anterior parietes of the abdomen, and yet pregnancy has occurred in the two latter cases. Morgagni attests that of the abdomen, lib. v. epis. 67; and the other is given in the Annales de Med. de Montpellier, which led the celebrated Louis to propose the following question to the casuists:—"an uxore sic disposita uti fas vel non, judicent theologi morales?" Barbaut cites two examples of pregnancy of this kind. Dic. des Sc. Med. art. Impuissance. Orfila contends such malformation is a cause of impotence, for though coition is not physically impossible, it is contrary to the laws of morals and of nature. The Royal Court of Treves annulled a marriage in such a case. In cases of vesico-vaginal, recto-vaginal fistulæ, and amplification of the vagina from laceration of the perineum, inflammation and ulceration may occur and impede sexual intercourse, but such cases could not warrant a divorce, if they occurred after marriage. Excessive straitness, or partial occlusion of the vagina, are not impediments to procreation, as fecundation may occur, if the spermatic fluid be applied inside the labia, as already mentioned. Besides, fecundation has happened, and the hymen perfect.--Ruysch, Paré, Smellie, Hildanus, Mauriceau, Boudelocque,

Nægele, Nysten. Jour. de Med. de Corvisart, and Leroux.—Prolapsus, and some forms of ulceration of the vagina, are only temporary causes of impotence. Cauliflower tumours of the clitoris or nymphæ may be temporary causes of impotence, as also tumours in the vagina. Manual of Midwifery, p. 55. Burns. Trans. Dublin College of Phys. 1824, v. 4. Ed. Med. and Sur. Journ. 1805. Leucorrhœa is one of the most common causes of sterility.

The uterus may be absent, (Columbus, Schlegel, Morgagni, Meyer, Renauldin, Hamilton, Bousquet, Theden, Engel, Lieutaud, Caillot, Ford, and Breschet.) I might quote numerous writers who describe the cavity of the uterus divided by a septum, but it is not stated whether or not procreation was impeded. Many authors have also described partial or total obliteration of the uterine cavity, among whom are Bichat, Lallement, Segard, Gardien, &c. The uterus may be double, that is, there may be two uteri. Haller, Purcell, Med. Facts. vol. 3. Mem. Med. Sci. v. 4. Lond. Med. Journ. 1782, v. 3.—Dict. des. Sc. Med. T. 6. Duges, Journ. de Progres, v. xxii. A vicious direction of the os and cervix uteri, or complete occlusion of the former, are irremediable causes of sterility.—The whole of the causes of impotence and sterility in females may be arranged under three classes; 1, those depending on the organs which receive the male fluid, namely, the genital fissure, the vagina and uterus; 2, malformation or diseases of the organs that transmit it to the ovaries, and reconvey the embryo to the uterus; these are the fallopian or uterine tubes; 3, the malformation or diseases of the ovaries or organs, which supply the germ for fecundation. Inflammation, ulceration, scirrhus, cancer, ossification, calcareous deposit or tumours in any of these organs, may be the cause of sterility. In fact, any disease of the female genitals, attended with much constitutional disturbance, may be held a temporary cause of sterility. Tumours of various kinds, callosities, cicatrices, adhesions, from disease or mechanical violence, displacement of the uterus, prolapsus, procidentia, retroversion, antiversion, lateral obliquity, and the various disorganizations incident to muscular, serous and mucous tissues, when present in the female organs, are causes of sterility. In the Lond. Med. and Surg. Journ.

v. 4, is an account of two singular cases of procidentia uteri; in both impregnation was effected through the natural orifice, though permanently fixed without the genital fissure for years. I have also published cases of dysmenorrhœa, in which pregnancy occurred.* In the disease called irritable uterus, so well described by Gooch and others, a cure may be effected. In absence of the ovaries and uterine tubes, there can be no conception, or in dropsy, or enlargement of the former, or in occlusion or adhesion of the latter to the uterus, or adjoining parts. There are some cases of constitutional sterility, which are inexplicable; for example, those in which a woman has had no family for years, and at length becomes a mother.

The principal moral causes of impotence are hatred, disgust, fear, timidity, an excessive ardour of desire, divers ramblings of the imagination; in a word, every passion strongly excited, that is to say, all cerebral action so strong as to diminish that of the genital organs, which require for coition great exaltation. Impregnation may happen under such circumstances. Fodéré is of opinion that complaisance, tranquillity, silence, and secrecy are necessary for prolific coition; it is arrested as if by enchantment, by noise, dread, fear, publicity, jealousy, contempt, repugnance, slovenliness, by love too much respected, and by every thing that can illumine the imagination.

Many of the causes of impotence in both sexes may be removed, but many are beyond the reach of art. It has been long maintained, that the powers of the mind have great influence in promoting and impeding the process of procreation. Much may be said for and against this position. In discussing this question in the work so often referred to, I have said—"In order to have coition effectual, there is a mutual relation necessary—a union in mind and pleasurable enjoyment, as well as in body, and unless this union of love be mutual, conception will seldom, if ever happen; for it has been long ob-

* Dr. Dewees says 'I have seen a few cases of fruitfulness where there was painful menstruation, without a membranous production; but such cases are rare' "I never met with one, however, where this production had been formed" (*Dis. of Females*, p. 94.)—*Am. Ed.*

served, that frigidity and reserve in either party will defeat procreation—a want of love being a certain cause of barrenness. Hence, in unequal marriages, where one of the party is old and the other young, there is scarcely ever offspring. Again, it has been observed, that in cases of rape, impregnation seldom occurs.

“In order to effect procreation, there must be an ability and fitness of disposition in the sexual organs of both parties. The disproportion of the organs impede or prevent conception. This is observed very often, when persons of extreme difference of stature cohabit. The most frequent cause of want of family, is too frequent intercourse; the male semen will be too weak, and the female will become relaxed, have increased mucous vaginal discharge, which will extinguish the vivifying principle of the male altogether. Hence we see strong, young, vigorous, and amorous persons remain married five, six, and seven years without children. I knew three respectable families in this predicament. I am inclined to think that the male semen is not sufficiently strong when only allowed to accumulate for a day; in fact, all healthy persons who desire children, should cohabit but once or twice a week, and they will be seldom disappointed in their expectations. The sexual act is not performed well when repeated too often. Hence when boys or extreme young persons get married, they seldom propagate. It is an opinion, that the greater the quantity of semen, the more perfect the formation, and even future disposition of the offspring, and the greater the pleasure experienced by both sexes. The first opinion is attested in the inspired writings. Gen. xlix. v. 3. The more the semen is preserved, the more powerful it is, and hence it ought to be retained for a few days, in order to render the sexual congress effectual.

“Care, thought of business, sorrow, sadness, and depressing passions should be avoided, as they have a bad effect on conception. This has been long the prevailing opinion among mankind, especially among physicians, naturalists, and I might add, sentimentalists too.”

On the other side, I have said, in disproving the vulgar notions, of the power of the mother’s imagination in deforming the infant, that:

“Conception is independent of the mother’s will and pleasure. How many women are desirous of children, and yet have none; while others, not only conceive, contrary to their wishes, but go to their full time in despite of the various means they wickedly and designedly employ to destroy the fœtus. Again, the nutrition and growth of the infant go on according to the laws of nature, whether the woman wishes it or not. It is also out of the mother’s power to choose a boy or girl—to have one or more children at a birth—to cause the infant to be fair, dark, large or small, weak or strong, or to give it her own or the father’s features. If then, women cannot by imagination or will, promote or impede conception, how can any one believe, without derogating from the power and wisdom of God, that they can disfigure the infants, and injure the works of nature? Is it not absurd to suppose that the mother has more influence over her child, than over her own body? The idea is preposterous. If she cannot, by the strength of her imagination, make any mark on her own body, or change the figure, situation, quantity, and number of her own limbs, why should we believe she can do so to the body of the infant? Is it not silly and ridiculous to think, that if the affrighted mother apply her hand to any part of her body, which may be done accidentally and undesignedly, this can affect the same part of the infant? Does she mark that part of her own body, by such application of the hand?”

From the preceding statements, we may I think, deduce the following general principles:—

1. To declare either sex impotent, it is necessary that the physical causes be permanent malformations or accidental lesions, evident to our senses, which art cannot remedy, and which prevent the faculty of exercising a fecundating coition.

2. These causes, when rigorously examined, are few in number.

3. The moral causes of impotence ought not to be taken into consideration, as they would serve as an excuse for an individual accused of impotence.

In this country the medical jurist is seldom required to decide questions of impotence or sterility in our courts of justice,

but every medical practitioner may be consulted in private, either before or after matrimonial engagements. He may be the cause of great domestic trouble, and embitter the life of male or female. He should be exceedingly cautious in fixing the stigma of impotence or sterility on either party. The legitimacy of children may be contested on a plea of impotence, and such a plea may be offered by a man accused of rape. It is therefore evident, that a proper knowledge of the subject is necessary to the medical practitioner.

Ambiguity of Sex.—Hermaphrodites.—There may be malformation of the genitals in both sexes, but there is no example of one individual possessing the perfect organs of both. Again, the organs may not resemble those of either male or female. There is no truth in the statement, that hermaphrodites have married and propagated, and the obstetrician is aware of the physical impossibility of a full grown infant passing through the male pelvis. It is evident that hermaphrodites must be impotent and sterile. The ancients were of opinion that such persons might propagate, even a canonist went so far as to maintain one individual could propagate within himself or herself—"tanquam mas generare ex alio, et tanquam fœmina generare in se ipsa." There is no case on record of a perfect hermaphrodite, and no truth whatever in the assertion that such class of beings can propagate the species. I can see no difficulty in supposing that persons of both sexes, with malformation of the genital organs may marry, when I recollect the curious and well attested case of a female who dressed in male attire, and assumed the name of James Allen, married another female, and lived as a husband for several years without detection. This case happened in London last year, and was discovered when Allen died, and on dissection was found to be a well formed female. Blackstone says, "a monster having deformity in any part of its body, yet if it hath human shape may inherit," and "every heir is male or female, or hermaphrodite; that is, both male and female, and shall be heir according to that kind of sex which doth prevail, and accordingly it ought to be baptised." The same is observed in cases concerning tenants by curtesy.* As the brain is gene-

* The English common law on this subject, is also binding in this country. Am Ed.

rally perfect in monsters, and the mind perfect, it is clear that such persons ought to inherit property. When two perfect bodies are united at the chest or back, as in the cases of the Siamese youths, lately exhibited in this city, and the Hungarian sisters, exhibited in 1723, it would be difficult to determine primogeniture, or right to property.

[The French penal code, though it contains no express provision for divorces, on the ground of impotence, seems to imply one: Art. 180, declares, there may be a dissolution of the marriage contract, "*lors qu'il y a eu erreur dans la personne,*" now what error is greater and more direct, than that which concerns the physical qualities requisite for the fulfilment of the ends of marriage. And on this ground it appears that divorces have been granted.

The law of England is, that a total divorce may be granted, whenever it is proved that corporeal imbecility existed before marriage. Imbecility however, arising after marriage, is not a sufficient ground for its dissolution, as there was no fraud in the original contract. (Christian's Blackstone.)

In this country, the English law on this point has been adopted: thus in Pennsylvania it is enacted by the act of 13th March, 1815, "that if either party, at the time of the contract, was and still is naturally impotent, or incapable of procreation, &c.; it shall and may be lawful, for the innocent and injured person to obtain a divorce." Dr. Beck says, that applications have also been repeatedly made to the legislature of New-York, for a divorce on the ground of impotence, supervening after marriage, but they have been uniformly rejected.]

CHAP. VIII.

Utero-gestation.—Pregnancy.

THIS is a subject which requires great attention from the medical jurist, on account of the numerous relations it has to civil and criminal proceedings. It affects the honor of husband and wife—it arrests the administration of justice when offered as a plea for reprieve—it aggravates an assault when

abortion occurs, which renders the crime a felony; it may be pretended, and deception attempted on the medical attendant and others; or the female may accuse the person of causing abortion, it may be concealed, and it may affect the honor and property of parents and children, as in its protracted state, which involves legitimacy.

For the better understanding of this important subject, it will be necessary to describe the signs of conception and pregnancy, including spurious, extra-uterine, false, pretended and concealed utero-gestation, superfætation or second conception, abortion, natural and provoked, duration of pregnancy, recent delivery, survivorship of parent or offspring, viability of infant monsters; and lastly, prolicide, fœticide, infanticide. These and all other medico-legal questions relating to obstetrics, I have fully discussed in my work on Midwifery, a plan adopted by foreign writers; but as yet neglected by the writers of this country. I shall notice them as concisely as possible on the present occasion.

Signs of ordinary pregnancy.—The signs of pregnancy may be divided into rational and sensible. The first result from the influence of the uterus on the moral and physical systems of the female, and are disorders and derangements of the organic functions or vital properties. The second result from the development of the uterus, and the presence of the fœtus in that organ.

Rational signs.—It is a vulgar opinion professed by Hippocrates and Galen, that a fecundating copulation is accompanied by more vivid enjoyment than an ordinary coition. The following signs usually occur after conception: there is a change in the moral and intellectual faculties, in the temperament and constitution of the female; the eyes lose their vivacity, their brilliancy, and become languid; the eyelids are surrounded by a blackish, livid or leaden colored circle; the nose is elongated, the mouth is smaller, the countenance is changed, the voice is stronger, the neck fuller, transpiration more odorous, the character more decided, and the passions more violent; the menses are generally suppressed, the mammæ are firmer, more sensible and more developed, sometimes secreting a thin, whitish serous fluid; the nipple is more prominent,

the areola is enlarged and of browner colour. Immediately after conception, the female experiences unaccustomed sadness, a tendency to fainting or complete syncope, horripilations, colic, and a vermicular motion in the uterus, which extends to the abdomen, borborygmi, and rigors. There is sometimes anaphrodisia, sometimes increased salacity. The pulse becomes more frequent, weaker, or fuller and softer, the temperature is increased, the transpiration is more abundant, the urine is more copious, turbid and cloudy, the secretions are increased, there is often ptyalism, the hepatic functions are disturbed, and there are spots and ephiledes on the face and skin. The taste and digestion are depraved, anorexia, nausea, inappetence and vomiting supervene, the female desires innutritious or disgusting food, as chalk, cinders, putrescent animal food, vegetables, fruits, acid drinks, and vinegar, &c. This inappetence and depraved taste, are followed in a few months by a keen, voracious appetite, but towards the last month of pregnancy, the digestive functions become deranged, as the stomach is so confined by the gravid uterus, that it can contain but a small quantity of aliment.

The moral state is subject to numerous changes, some women, naturally gay and amiable, become sad, melancholy, and unsociable, and vice versa. Many diseases appear, others disappear, as hysteria, chlorosis, chorea, epilepsy. The whole of these signs are seldom observed in all cases, and are doubtful and uncertain. If all are present they afford strong proof of pregnancy, but never that positive certainty which enables us to give decisive evidence before magistrates.

Sensible signs.—These signs consist in augmentation of the abdomen, in the active and passive movements of the fœtus, in the perception of the fœtal and placental pulsations by means of auscultation, in the evidence afforded by the *touch* or vaginal examination, or *ballotement*, as to the state of the os and cervix uteri in the different stages of gestation, and the developement of the uterus. The most certain of these signs are the touch or ballotement, and auscultation. The touch consists of the introduction of the finger into the vagina, and the application of the other hand above the pubis, the uterus will be felt enlarged, and if gentle percussion be applied above

the pubis, the fœtus will be made to strike the finger, which cannot happen unless there be a fœtus and a fluid in the uterus. However, the sign is not always conclusive, for it has existed in extra-uterine fœtation. The sign can only exist about the fifth or sixth month, and has led to mistake even at the approach of parturition. (Capuron *Malad. des Fem.* p. 72.) The results of auscultation exist, in some degree, when the fœtus is dead, and also in extra-uterine fœtation. The changes of the neck and body of the womb enable us to distinguish pregnancy from hydropsy, tympanites, hydrometra, hydatids, moles, polypi, &c.

The spontaneous motions of the fœtus takes place about the fifth month, but some women never perceive them during the whole period of gestation, whilst others imagine them present, when there is no conception. Nervous and hysterical women very frequently make the last mistake. The spontaneous motions of the fœtus and quickening, are not infallible proofs of pregnancy. Auscultation has been called into action to enable us to decide this point. M. Le Jumeau de Kergaradec has applied the ear and the stethoscope to the abdomen, and discovered the double motion of the fœtal heart, and also the pulsation of the placenta, which was synchronous with the maternal pulse. It is to be recollected, that the first must change with the infant, and consequently must be heard in different parts of the abdomen, at different examinations. Dr. Kenedy, of the Dublin Lying-in Hospital, has written in favour of auscultation, in the *Dublin Hospital Reports*, vol. v. 1830.—M. Velpeau has tried it in a great number of cases in vain. *Traité Elementaire des Accouch.* 1829. Dr. Ferguson, of Dublin, thinks it an unequivocal proof. *Dub. Med. Trans.* vol. 1, 1830. From the preceding considerations, the following conclusions may be drawn:—

1. That the fœtal and placental pulsations, when discovered by auscultation, are positive proofs of pregnancy.
2. That in all cases before the fourth month, the diagnosis is extremely uncertain.
3. That during the five succeeding months, better evidence is afforded by the progress of uterine developement.

4. That there is no infallible sign of pregnancy, except that afforded by auscultation.

Previous to the application of auscultation, it was held by the following authorities, that there was no infallible sign of pregnancy in the early months:—Hamilton, Burns, Mahon, Fodéré, Capuron, Farre, Male, Beck, Smith; Edinburgh Med. & Surg. Journ. 1823, vol. 19. Med. Chir. Rev. 1824. Med. & Phys. Journ. 1825. For exact references, see my work on Midwifery.

Dr. Beck concludes, that it is impossible to decide on pregnancy before the sixth month, but this opinion is refuted by subsequent experience. We may derive advantage from attending to the signs of the different epochs of pregnancy, which are afforded by the developement of the uterus. During the two first months, the diagnosis is extremely obscure, and cannot be attempted with any degree of certainty. At the end of the third month, the fundus uteri is on a level with the superior margin of the pubis; at the end of the fourth month, the uterus is in the hypogastrium, the spontaneous motions of the fœtus are perceived by the mother, and the diagnostic styled *ballotement*, is afforded to the obstetrician. At the end of the fifth month, the uterus touches the inferior boundary of the umbilical region, and the cervix uteri is elevated in the vagina. At the end of the sixth month, the uterus is felt at the umbilicus, and as this part projects, the motion of the fœtus may be felt by the practitioner. We can now avail ourselves of auscultation. Morgagni proposed the following plan for discovering the motions of the fœtus. In warm weather, let the hand be immersed in cold water, and suddenly applied to the abdomen of the female; and in cold weather, let the hand be immersed in warm water and applied, when the motion of the infant will be distinctly felt. I have often acted on these suggestions with success. It is also to be remarked, that the cervix uteri begins to diminish in length at this period, as well delineated by Gooch and Meygrier. At the end of the seventh month, the uterus approaches the inferior margin of the epigastric region. The abdomen affords a dull fluctuation, which differs from that of ascites; percussion affords a dull sound, which is distinguishable from tympanites or meteorism. At the end of the eighth month, the uterus is in the

epigastrium, the cervix nearly developed, directed towards the sacral concavity, round, gaping, and thickened; the limbs of the fœtus may be often felt through the abdomen. At the end of the ninth month, the uterus becomes depressed under the epigastrium, the orifice of the uterus is more easily felt, rounded and often open, the head of the infant can be readily felt. In women who have had former pregnancies, the uterus does not ascend so high as in first cases, as the abdominal muscles have been relaxed, and it therefore inclines more forward. In diagnosing, in cases of doubtful pregnancy, we should not forget to bear in mind the appearance of the abdomen in ovarian dropsy, and here a careful history of the symptoms will enable us to arrive at a correct conclusion. I have frequently known young women affected with this disease, to have all the appearances of pregnancy; the general health suffers little, and sometimes not at all; the catamenia are regular—the usual symptoms of pregnancy are absent, and upon close inquiry, it will be found that pain commenced in the ovary, and the tumour was first in one side. In this, as in all other cases, a knowledge of disease will alone enable us to diagnose correctly. This knowledge is to be obtained by reference to the best systems of obstetrics, and by actual experience. It would far exceed the limits by which I am circumscribed, were I to describe the various diseases which may be mistaken for pregnancy. I must refer the reader to the standard works upon this subject. After a luminous description of the diagnosis in the case before us, and all its difficulties, M. Velpeau concludes, “but it is dangerous to forget that there exists causes without number (of deception,) and that before the tribunals one ought never to give a decisive judgment, without having previously acquired a mathematical certitude of the fact upon which he pronounces.” This is the received opinion of the present time.

Dr. J. C. Fergusson has published five cases of concealed pregnancy in the *Dub. Med. Trans.* 1830, in all of which he was enabled to discover the pulsations of the fœtal heart and *bruit* of the placenta. He says, “I conceive it to be sufficiently established, that either a placenta or fœtal heart being heard, constitutes infallible evidence of pregnancy; evidence

upon which a medical man may, if required, conscientiously and positively swear to the fact, which I believe all admit, and our legal records show, could not be done under ordinary circumstances. * * * * The absence of these phenomena amounts, if not to positive, at least to presumptive proof of the contrary." I cannot agree with these conclusions, because many practitioners may not be sufficiently dexterous with the stethoscope to detect the pulsations ; and as further evidence is required to warrant the latter conclusion. It is very manifest, however, that auscultation ought to be employed in doubtful cases of utero-gestation.

In cases of extra-uterine foetation, should the Cæsarean operation, or rather gastro-hysterotomy be performed, the infant cannot inherit property according to the laws of this country. (Blackstone.) This is the only medico-legal point connected with the subject. A point of much importance to be decided is, whether twins be the result of one coition or of superfœtation. The decision will affect primogeniture. The question has not been discussed by any British writer on forensic medicine except myself.

[Although the laws of most countries have considered the state of pregnancy, as one which should exempt a female condemned to the punishment of death, from the enforcement of the sentence, during that period, they differ in some of their particulars.

The ancient Roman code, provided that a woman should not suffer the punishment of death, whilst in a pregnant state. The penal code of France, Art. 27, enacts that, "if a woman condemned to death declares, and if it be verified, that she is pregnant, she shall not undergo her punishment, until after her delivery." As is observed by Dr. Briand, it is to be regretted that a law, passed on the 23d germinal an. III., which enacted, that no woman should be tried during a state of pregnancy, was abrogated. It must be evident, that the violent emotions experienced by a female in this state, arraigned for crimes which may implicate her honour or her life, are very likely to compromit the existence of her child.

In this country and England, two cases may occur in which a knowledge of the signs of pregnancy, may be requi-

red to aid the aims of justice. The first is when a female is condemned to death and pleads that she is pregnant. This if proved, will always respite her execution till after her delivery. But it must also be proved, that she is not only with child, but quick with child ; this is ascertained by the issuing of a writ *de ventre aspiciendo*, directing a jury of twelve matrons, or discreet women, to verify the fact.]

Superfætation.—Physiologists are at issue upon the question of superfætation, or whether it is possible for a pregnant woman to conceive a second time. According to Aristotle, a female was delivered of twelve infants, and another of twins, one of which resembled her husband, the other her lover. Some writers maintain that superfætation is possible during the two first months of pregnancy ; the majority hold it possible during the first few days after conception, before the uterine tubes are closed by the decidua. This is the received opinion, though cases are on record which justified Zacchias and other jurists, to conclude that superfætation might occur until the sixtieth day, or even later. Nothing is more common than to see a full grown infant born, and another of the second, third, fourth, fifth, or sixth month expelled immediately after. I need not cite authorities upon this point, as obstetric works abound with examples. But a few may be given. Dr. Maton published an account of a woman who was delivered of a full grown infant, in three calendar months, afterwards of another, apparently at the full time. Trans. Coll. Phys. vol. iv. A woman was delivered at Strasburg, the 30th of April, 1748, at ten o'clock in the morning ; in a month afterwards M. Leriche discovered a second fœtus, and on the 16th of September, at five o'clock in the morning, the woman was delivered of a healthy full grown infant. Manuel Complet de Med. Leg. par Briand. Degranges, of Lyons, attests a case, where a woman was delivered at the full time, the 20th Jan. 1780 ; in three weeks afterwards she felt the motions of an infant, and her husband had no intercourse with her for twenty-four days after delivery. On the 6th of July, (five months and sixteen days subsequent to delivery) she brought forward a second daughter, perfect and healthy. On the 19th Jan. 1781, she presented herself and both infants, before the notaries at

Lyons to authenticate the fact. Fodéré, vol. 1. These cases prove the possibility of superfœtation, four, five, and six months after conception. This may be possible, as menstruation has occurred during pregnancy, (Mauriceau, Deventer, Heberden, Francis, Hosack, Dewees, Capuron, Mayo.) Buffon related a case of a woman in South Carolina, who brought forth a white and a black infant, and on inquiry, it was discovered that a negro had entered her apartment after the departure of her husband, and threatened to murder her unless she complied with his wishes. Dr. Mosely relates a similar case. A negress, of Guadeloupe, brought forth a black and mulatto, having had intercourse with a white and black man the same night. Another negress produced a white, black, and a piebald infant. A domestic of Count Montgomery produced a white and black child at one birth, (Velpeau.) Gardien relates a similar case on the authority of M. Valentin. A mare has produced a foal and a mule, she having been impregnated by a horse, and in five days afterwards by an ass. In treating of this subject, in my work on Obstetrics, 1828, I made the following remarks:—

“Another argument, which I have never seen, occurs to me from analogy, which deserves mention; namely, that each dog will produce a distinct puppy—this no one can deny; for the offspring will resemble the different males that fecundate the bitch in succession. If a number of healthy vigorous men were to have intercourse in succession, immediately after the first conception, I think it probable and possible, that similar superfœtation would happen. I am proud to say, that Dr. Elliotson is an advocate of superfœtation. He explains Buffon’s case this way. Magendie is of the same opinion. Medical men must bear in mind, that women have had three, four, and five children at one birth. Various cases of infants of different sizes being expelled in succession, are recorded in our own periodicals. *Medical and Physical Journal*, v. 22, p. 47.—v. 24, p. 232. *Medico-Chirurgical Transactions*, v. 9. *Philosophical Transactions*, v. 60.

“One of the Pennsylvania newspapers in 1827, recorded the case of an Irish lady, who in eighteen months had at three births twelve living children, all born prematurely. She and

her husband were healthy fresh looking people, and only two years married. This case is not recorded as yet, in any of the American Medical Journals; but if it prove to be authentic, it will be the most extraordinary case of fecundity recorded in any country. Cases of twins, triplets, quadruple and quintuple births, are of very rare occurrence; but of these more particularly hereafter." Dr. Golding, of this city, delivered a woman of six infants during the year 1829.

I am happy to add, that Professor Velpeau, of Paris, is of the same opinion. He says, "In according all possible authenticity to these observations regarding their exactitude as demonstrated, the idea which prevails in physiology on generation, permits an easy explanation. Two ovules can be fecundated one after the other, in a woman who accords her favours to two or more men, the same day, or in two or three days afterwards, that is to say, to the moment when the excitation of the first coition causes the effusion of cougulable lymph into the uterus, to form the caducous membrane (decidua.) These ovules may not descend through the uterine tube at the same time, and may be differently developed. But he thinks superfœtation impossible after the decidua is formed. *Op. cit.* The closure of the os uteri after conception, does not take place for some days, weeks, or months (Dewees,) but if the male semen be absorbed from the vaginal surface, and conveyed directly to the ovary, as in the elephant, cow, sow, (Gertner) such closure is no objection. Twins have generally but one amnion and placenta, but in cases of superfœtation, each infant has its own membranes and placenta. I once attended a female who was delivered of one infant on Monday, the parturient action ceased, and on the following Thursday, the membranes presented, and she was delivered of a second infant. There was no hæmorrhage, and the placentæ were united. My friend, Mr. Whitmore, sent me a similar union of the placentæ, a short time ago. Whether we suppose superfœtation or twins, the medical practitioner ought to notice which was born first, male or female, when the disposal of property or title depends upon the decision. The question is, which was born first, not which was conceived first. Admitting superfœtation to be possible, and it cannot be denied in the early weeks of gesta-

tion, we cannot decide paternity, unless perhaps, when one infant is black or brown, and the other white; but if both males were of the same colour, the decision might be difficult, unless some physical mark on the infant existed in one of them. The following conclusions are admitted in cases of pregnancy. It is now decided that a female may become pregnant, and be ignorant of it until the time of labour. (Fodéré, and Sanders of Edinburg.) This may occur in cases of idiots (Desgranges, when the female is in a state of stupor, either from inebriation, narcotics, coma, syncope, or during sleep. Fodéré, Orfila, Beck, Hebenstreit, and author's work on Midwifery.

Duration of Pregnancy.—Legitimacy.—Hippocrates, Aristotle, Galen, Pliny, Avicenna, Mauriceau, Riolan, La Motte, Hoffman, Schenk, Haller, Bertin, Lieutaud, Petit, Levret, Louis, Astruc, &c., maintained that pregnancy usually terminates at the end of the ninth calendar month, but might be protracted to the tenth, eleventh, twelfth, and some of them said, to the fifteenth.

It is also decided by a preponderating majority of the profession, in all countries, that the term of utero-gestation is not uniform; in other words, not invariably limited to nine months. This position is strongly attested by the analogy afforded by the inferior animals, for it appears by the extensive observations of M. Teissier, on the gestation of heifers, mares, sheep, swine, and rabbits, that all these animals may exceed their usual periods of delivery. Trans. de l'Acad des Sc. Paris, 1817. Further evidence is afforded by the vegetable kingdom, in which we observe in the same field, on the same tree, shrub, &c. different parts of vegetables arrive at maturity with more or less celerity. Petit informs us that many faculties of medicine, forty-seven celebrated authors, and twenty-three physicians and surgeons, concluded pregnancy might be protracted to the eleventh or twelfth month. He cites a case on the authority of Schlegel, in which pregnancy was protracted to the thirteenth month; the child was admitted to be legitimate, on account of the probity and virtue of the mother, which induced her shopman to marry her, and she bore two

children by him, each at thirteen months. Tracy, a naval physician, relates a case at the fourteenth month. Dulignac, a French surgeon, positively asserts that his own wife quickened at four months and a half, and on two occasions she went to the thirteenth month and a half, and on the third, to the eleventh month. Desormeaux relates a case of a mother who had three children, who became maniacal, and whose physician, after all means had failed, recommended pregnancy. Her husband had intercourse with her once in three months, of which he kept an exact account. She was closely watched by her domestics, and she was extremely religious and moral; she was delivered at nine months and a half. (Velpeau.) The last author attests a case which went to 310 days; and Fodéré two of ten months and a half.

The medical evidence in the Gardner Peerage cause, tried before the House of Lords, in 1825 and 1826, throws much light upon the subject. It is right, however, to observe, that witnesses spoke from their personal experience, lost all sight of physiological science, and of the numerous opinions of ancient and modern writers, that "one and all have shewn an extraordinary ignorance on the principles of evidence, will be conceded by every one who examines carefully their testimony. But it may also be doubted whether the question admits of better evidence than has been already proved, or at least arrived at, by them and their professional predecessors."—(Dr. Duncan, *Edin. Med. and Surg. Journ.* 1827, v. xxvii.)

I have condensed this evidence in my work, so often referred to, as follows:—

"The majority of the medical men, examined in the Gardner Peerage cause, were in favour of protracted pregnancy, as Drs. Granville, Conquest, Blundell, Hopkins, Hamilton, of Edinburgh, and Power. Dr. Granville proved that his own wife went to three hundred and six days, even admitting pregnancy to have occurred the day before the interruption of menstruation; and three hundred and eighteen days, if from the middle of two of the last and expected periods. Dr. A. T. Thomson, who attended her, was of the same opinion, that the child was ten months old at birth. Dr. Granville knew other cases of two hundred and eighty-five, two hundred and

ninety, and three hundred; and one doubtful at three hundred and fifteen days. Dr. Conquest knew two or three cases at the tenth month.

His patient was a most sensible woman, who had been the mother of six children, and had engaged him and the nurse to attend her at a certain time; went five weeks after, and four with the next. She had other children afterwards, at the ninth month. Dr. Merriman knew cases, at 280, 285, 303 and 309 days, and thought the Gardner case possible; Drs. Blundell and Hopkins, 285; Dr. Power, eleven months; Dr. Hamilton, ten calendar months; and Dr. Collins, of Liverpool, published a case of eleven months soon afterwards, which occurred two years before. *Edin. Med. Journ.* April, 1826, v. 25. This is most worthy of perusal. I know a delicate woman, who menstruated the last week in February, 1826, quickened in July, and engaged me to attend on her in November. She had spurious pains in November, December, and January, 1827, and was delivered on the 28th of February, 1827; nearly twelve months from her previous indisposition. I had most serious business from home in November, but by her entreaties deferred my journey in that, and even the next month, and of course I then daily expected her delivery; yet she went two months later. The infant was a girl and of the ordinary size, and she and all her friends thought she would be undelivered from her protracted pregnancy; yet her labour was only of two hours continuance and perfectly natural. I shall ever have cause to remember this case, as I nearly lost some property by deferring my journey to attend upon it. It was a first pregnancy. I most solemnly declare, that the case was a true one, and not fabricated to support any particular opinion. This is the longest instance of protracted pregnancy, which has hitherto been recorded in British medicine. Another argument in favour of protraction is, that children often grow more in one year than in seven years before, which would prove the developement may not be the same in the womb. The following accoucheurs were produced against the doctrine of protracted pregnancy, on the Gardner Peerage cause. Dr. Charles Clarke, who in twenty cases, never knew one exceed the term of nine months. His evidence does not

controvert the opposite side of the question. Dr. Blegborough had practised extensively for thirty-four years, and never knew pregnancy exceed the ninth month. Mr. Pennington contended for forty weeks and three or four days; and Drs. D. Davis and Gooch were of the same opinion. It is a strange but positive fact, that these gentlemen who came forward to prove pregnancy to be immutable and definite at a certain period, all admitted it might exceed nine months, by four or six days; hence the justice of Dr. Duncan's critical sneer at their evidence. In the case under consideration, the claimant Jadis, otherwise Gardner, was born eleven months after his father went abroad, and his mother had cohabited with Jadis, the father, soon after Lord Gardner had been absent. On his Lordship's return, he obtained a divorce against her, and married again; and the offspring of the second marriage, on claiming his father's title, was opposed by Jadis, who, at the adult age, took the name of Gardner: and under these circumstances, and contrary to the medical evidence of the majority of the obstetricians, the House of Lords decided against him. The evidence in favour of the legitimacy of Jadis was founded on too few cases, to warrant a perfect confidence in it, or to settle the question of protracted pregnancy. The *Edinburg Medical Jurist* justly concludes, by stating that there was not a single new fact advanced by the medical men, in elucidation of the subject at issue; and the reviewer smiles and "wonders at the want of knowledge of the witnesses who appeared to be unacquainted with the nature of legal evidence; and neither their evidence, nor that of the other side, was sufficiently accurate, in not being deduced from physiological science; which however, in the present state of medical knowledge on the question, could not perhaps be more accurate. On the whole, the weight of the testimony was in favour of the advocates of protracted pregnancy; but the mother having cohabited with another, proved her incontinence; which fact influenced the House of Lords against the legitimacy. After all, the subject remains as obscure as before, and will require much more scientific medical evidence to decide it one way or the other."

Dr. Dewees relates a case of a lady, whose husband was

absent on account of embarrassment of his affairs. He returned one night clandestinely, had intercourse with his wife, whose menstrual period was expected within a week and occurred, yet she was delivered in nine months and thirteen days from the coition. Work, 1825. The question of protracted gestation, and more especially the Gardner Peerage case, was discussed at the Westminster Medical Society, in Dec. 1829. when Dr. Granville adduced the following authors in favour of the affirmative side of the question :—Among the ancients, Hostius (Horstius), Sylvius, Harvey, Mauriceau, Levret, Lieutaud, Heister, Delignac, La Cloture, Benedictus, Petit, Smellie, and W. Hunter. Among the moderns, are Osiander, Fodéré, Schoreider, Lentosseit, Sprengel, Adelon, Bardt, Capuron, Orfila, Burns, Desormeaux, Dewees, Hamilton, of Edinburgh, and Merriman. I have already mentioned many others. On the occasion in question, Mr. Chinnock related a case of a female who menstruated Oct. 14, and had intercourse with her husband on the 29th. She was delivered on the 20th of February, a space of two hundred and ninety eight days after the connexion, but labour commenced three days previously. I mentioned the cases narrated in the extract from my work inserted above; and Dr. Ley and Mr. North took the same side of the question. The whole of the society were of the same opinion, with one or two exceptions. Lond. Med. & Surg. Jour. 1830, v. iv. Med. Gaz. 1830, vol. v. There is no doubt but the weight of medical authority, in ancient and modern times, is in favour of protracted pregnancy; but in the present state of science it is impossible to assign the exact limit. The law of this country assigns no limit to utero-gestation; the law of France limits it to three hundred days or ten months, and allows legitimacy to be contested after this period.—(Velpeau.)

[The laws of our several states, like those of England, affix no precise limit to the term of utero-gestation, and this, we think, is consonant with the dictates of justice. Our learned countryman, Dr. Beck, is of a different opinion, and contends that the term should be fixed by statute, beyond which children should be deemed illegitimate; this he proposes at forty-three weeks after the death or absence of the husband. Now,

although this term would include a majority of the protracted cases, still there might be some, as has been shown in the text, which would exceed this. The plea of great protraction necessarily is a rare one, and public opinion is so firmly established as to the usual term, that no danger can arise from an occasional acquiescence of the fact of its prolongation to an unusual period. Added to which, if it be admitted that this prolongation can occur, it surely would be barbarous to brand a woman with infamy, and her offspring with illegitimacy, because she has been so unfortunate as to have suffered the anxieties and perils of pregnancy, for a longer period than the law deemed fit. Arguments on the *laws* of nature, are here of no avail, we must rely on *facts*, and these teach us that nature, although generally uniform in her operations, is not always so; and it is certainly our duty to consider such aberrations as misfortunes, and not as crimes.]

CHAP. IX.

Abortion.

IN judicial investigations relative to abortion, medical jurists are required to decide the following questions:—1. Has there been abortion produced? 2. Is the abortion natural or provoked? 3. Has the fœtus quickened?

Signs of Abortion.—To determine whether abortion has taken place, we must always examine the product of abortion, and also the female who is said to have aborted. If we do not see the substance expelled, we cannot give a satisfactory, much less a decisive opinion.

Examination of the embryo, or fœtus.—During the two first months of utero-gestation, we must be extremely cautious, and take care not to confound the fœtus with a mole or false conception, or with a sanguineous concretion or false mole. At this period, the embryo is enveloped in a capsule formed by two membranes, (the chorion and the amnion,) united to a spongy mass (the placenta,) more voluminous than itself. The first of these membranes is torn, and allows the second

to escape in the form of a membranous sac, to which is attached a clot of blood. On opening this sac, a quantity of fluid escapes, and the embryo will be found in an organized condition. It is a gross mistake in many works on obstetrics, in which it is stated, that the fœtus cannot be recognized at this period. I have a preparation which shews it perfectly formed at two months and a half. There is also an illustration of the embryo at the forty-fifth day, in an organized form, in the excellent plates of Meygrier. We seldom see the substance expelled in early abortions, as it is generally destroyed by the female attendants; and every obstetrician must have been embarrassed by this circumstance, and must have seen cases of supposed abortion, in which the expelled substance was a clot of blood. Hence the necessity of washing such substance, when any doubt exists, in order to determine whether the substance be blood, a mole, or a real conception. We should also remember the frequency of catamenial obstruction for two or three months, and how often women suppose themselves pregnant when they are not so. In such cases the want of coagulation in the menstrual fluid, proves it not to be blood. In the cases before us, it is absolutely necessary to know the appearances of the fœtus at the different periods of gestation. The embryo is visible at the fifteenth day (Meckel,) and the ovum is six or eight lines in diameter. It is piriform, elongated, curved, round, enlarged at one extremity, which is the head, and attached to the membrane at the other extremity, having a white cord, which is the spinal marrow. (Velpéau.) Towards the end of the *first* month, the extremities begin to appear in the form of round tubercles, and the umbilical cord is seen attached to the intestine; the liver is large and fills the abdomen. In the course of the *second* month, the head is equal in size to nearly half the body; the eyes are seen as two black spots; the nose, nostrils, and the ears are apparent; the arms and legs begin to appear; the toes and fingers are distinctly observable; there are many points of ossification in the frontal and maxillary bones, the clavicles, ribs, and os ilium. The rest of the osseous system is in a state of cartilage. The penis and clitoris project, and the sex may be determined. The embryo is little less than two inches long, and weighs nearly an ounce.

At three months, the fœtus is about four inches long, and weighs nearly three ounces. It is impossible to mistake it at this period, and therefore it is unnecessary to describe its developement any farther.

The law of this empire is extremely defective on abortion, for it abounds with the greatest absurdities. Its intention is humane and excellent, but it is based upon erroneous physiological principles. It enacts, for instance, that the embryo is not animated until after quickening, that is, until half the period of utero-gestation has elapsed, though the fœtus is alive from the very moment of conception. I have described its developement before the period of *quickening*, which I need scarcely observe, could not happen if it were inanimate.

Again, a jury of matrons is to decide whether a woman be pregnant or has quickened, questions which the whole faculty of physic, in every part of the world, could not determine, in the early months of pregnancy. It would be as wise to appoint a jury of infants to determine these questions. The law also enacts it felony to procure abortion before quickening, and subjects the person who does so by any means, or even advises it, to transportation for seven or fourteen years; and to death, if after quickening. Every man must applaud this philanthropic legislation; but it places the medical practitioner in a most dangerous predicament. Thus in thousands of acute diseases, where life is in the greatest danger, treatment must be employed which may produce abortion; and is the practitioner to allow his patient to die without the benefit which his art affords? In some cases of uterine hæmorrhage, the life of the female can only be saved by extraction of the infant. Yet this is producing abortion in the eye of the law. Again, if the woman is so deformed, that a full grown infant cannot be born at the full time, that is, at the termination of the ordinary period of utero-gestation, without a fatal operation, is the medical man to allow the female to be placed in this predicament when he can save her life, and that of her infant, by inducing premature delivery? If the infant arrive at the full term of utero-gestation, it must be destroyed by nature or by art; and by the latter to save the life of the mother. As the statutes now stand this is felony; but a talented legal writer

observes, "it may be presumed the operator in such cases only commits *justifiable* homicide, and not the crime of abortion." (Cabinet Lawyer.) Surely the operator can be influenced by no clandestine or sinister motive, in endeavouring to save the lives of the parent and offspring. But to resume the medical part of the subject. We should examine the woman, to ascertain whether abortion has really happened. It is impossible to determine this point during the first two months of pregnancy, as the fœtus is too small to leave any trace of its passage. When it occurs in the last months of gestation, the usual signs of delivery will be present, which will be described hereafter. The expulsion of moles, hydatids, or other morbid growths, should not be lost sight of, and should be carefully examined. The phenomena presented by the abdomen and external genitals, can only be valuable in proof of abortion, when conjoined with the following circumstances:—1. When there is a certainty of pregnancy, and a comparison made between the development of the fœtus and the period of gestation. 2. When the pregnancy is so far advanced that the changes in the os and cervix uteri are appreciable. 3. When examination is made, immediately after the abortion has taken place.

The practitioner should bear in mind the immense number of causes which produce abortion; and therefore ought to be extremely cautious in making a judiciary report in such cases. Many of these causes are peculiar to the woman, as excessive sensibility, and too great contractility of the neck of the uterus, rigidity of the fibres of the body of the organ; or laxity or flaccidity of its neck; habitual delicacy of health, menorrhagic disposition, or debility of constitution; all acute, and a great number of chronic diseases, fevers, continued and intermittent, inflammations of the various organs, peritonitis, gastritis, enteritis, cystitis, hysteritis, rheumatism, pleuritis, variola, scarlatina, hæmorrhoids, convulsions, pertussis, chronic catarrh, colic, cholera, diarrhœa, dysentery, constipation, gonorrhœa, leuchorrhœa, scirrhus,* cancer, retroversion, polypi,† dropsy,

* Bonetus.

† Levret.

and various diseases of the uterus, hydramnios, hysteria, moles with the fœtus,* &c. The diagnosis of these diseases is easily established. When abortion depends on rigidity of the fibres of the uterus, it recurs at later periods in successive pregnancies, as the uterus gradually expands; but when abortion is caused by laxity of the neck of the organ, the laxity increases in each pregnancy, and the abortion happens earlier. Among the ordinary or hygienic causes, may be enumerated violent mental emotions, the impression of strong odours, the fright caused by thunder, noise of artillery, sight of extraordinary and frightful objects, errors in diet, stimulating food and drink, abuse of spirituous liquors, too much exercise, as walking, riding, dancing, running, the agitation of carriages or other vehicles, accidental falls, or blows on the abdomen, wounds, tight clothing, immoderate laughter, abuse of venery, surgical operations of any kind, even the extraction of a tooth, &c. Sometimes abortion depends on the death of the fœtus, from debility, ill cured syphilis, monstrous conformation, diseases of the placenta, scirrhus, calculus, hydatis, its implantation over the neck of the uterus, &c. Again, we know that a peculiar constitution of the atmosphere will produce abortion, as an epidemic, (Hippocrates, Fodéré.) All powerful medicines, as emetics, purgatives, mercury, &c. may cause the premature expulsion of the fœtus. Venesection has been employed to produce abortion, but it seldom or never succeeds. A woman has been bled forty, and another ninety times, and yet arrived at the full period. (Mauriceau.) This remedy is successfully employed to prevent miscarriage, and has been repeated seventeen times in a case with success. Emetics and purgatives often fail to produce the desired effect, and the latter often destroys the female by inducing abdominal inflammations. Emmenagogues also fail in most cases. Various herbs are employed by the vulgar, mentha pulegium, sabina, secale cornutum, artemisia rubra, &c. and unfortunately with effect. But we must conclude that there is no medicine or abortive means, which always produce abortion, and nothing but abortion;

* Morgagni.

there is none which does not endanger the lives of the mother and infant. Irritation of the cervix uteri by mechanical means, and piercing the membranes, justify the truth of the remark, *Sæpe suos utero quæ necat, ipsa perit.*" "Every woman who attempts to promote abortion, does it at the hazard of her life." (Bartley.) There is no drug which will produce miscarriage in women who are not predisposed to it, without acting violently on their system, and probably endangering their lives." (Male.) It has frequently occurred," says Dr. G. Smith, "that the unhappy mother has herself been the sacrifice, while the object intended has not been accomplished."

When called on in courts of justice, to report on an abortion, supposed to be provoked or criminal, we should duly consider the causes already enumerated, the circumstances which preceded it, whether the female has denied her pregnancy, procured abortives, used drastic medicines, applied to various practitioners without acknowledging her real condition, and a variety of other inquiries, which will suggest themselves to every well informed practitioner, before we can decide that she premeditated the crime. If the woman had died, we should examine the uterus to discover wounds, and also the abdominal viscera, as it often happens death is produced by enteritis or peritonitis, though the uterus may have been punctured a few hours before death. This was the fact in a case tried at the Old Bailey, during the last year; the medical witness for the prosecution ascribed the cause of death to the punctures, which were not inflamed; but the witnesses for the prisoner to enteritis. According to the law of this country, the exhibition of any medicine, for the purpose of causing abortion, renders the accused liable to a prosecution for felony; and therefore those young men who vend medicines, ought never to commit themselves by vending the most harmless medicine to applicants in the case under notice. Should the female acknowledge that a certain apothecary sold her medicine for the purpose, he could have no witness to disprove her allegations and consequently must incur the greatest danger to his liberty or life. Too many young men forget that the crime of abortion is the destruction of a human being; and hence they incautiously supply medicines in general harmless

ones, without the slightest recollection of the perilous situation in which they place themselves. I trust that this caution may be useful to my junior readers.

Medical jurists designate criminal abortion, *fœticide*, that is, destruction of the *fœtus* in utero; and apply the term *infanticide* to the destruction of the new born infant. Both terms are included in the word *prolicide*. Before we consider this part of our subject, it is necessary to describe the phenomena of parturition, and the viability of the infant.

[We shall not attempt a review of the laws of different countries on the subject of abortion, this has been done in so able a manner by Dr. Beck, that it would be superfluous merely to reiterate his observations. As regards our own country, however, the legislative enactments differ so much, that they deserve particular notice here; the English law as stated by Blackstone: "If a woman is quick with child, and by a potion, or otherwise, killeth it in her womb, or if any one beat her, whereby the child dieth in her body, and she is delivered of a dead child, this though not murder, was by the ancient law, homicide or man slaughter. But the modern law, doth not look upon this offence in quite so atrocious a light, but merely as a heinous misdemeanor. (1. p. 129.) We mention the English law as from reasons alluded to in chapter vi. it is also the common law in those states, which have no special legislative enactments on the subject. The law of England now in force under the act of 1803, being statute and not common law has no force here.

The law in the State of New York we have already detailed (page 90.) That of Louisiana is very full and explicit, condemning any person who procures or is privy to the procurement of abortion, to hard labor, for not less than three or more than six years, except in cases where it is procured by medical advice for the purpose of saving the life of the mother. If death ensues, from attempts to procure unlawful abortion it is murder."

In Connecticut, it is imprisonment for life, or such other term as the court shall award.]

CHAP. X.

Of Delivery.

THE medico-legal questions relative to delivery are, 1. Do signs exist by which we can determine that a woman has been recently delivered? 2. At what period afterwards can we find traces of delivery? 3. Can a woman be delivered unconsciously? 4. When the mother and infant are found dead, which was the survivor?

Signs of recent delivery.—The signs of recent delivery are observable in the sexual organs, uterus, abdomen, the lochial discharge, state of the breasts, and secretion of milk. In the first days after delivery, the labia majora et minora are dilated, red, tumified, and often inflamed, the vulva is open, the fourchette is partially or completely torn, the orifice of the womb is so dilated as to admit the introduction of one or two fingers into the cavity of the organ; the posterior lip is elongated and thickened; both lips are much thicker than during pregnancy. The womb itself is more voluminous, can be felt above the pubis, or may be felt enlarged by placing one hand on the hypogastrium, and a finger in the vagina. The size and flaccidity of the abdomen, its wrinkled condition, the lochia and milk, are signs of recent delivery: but all may be present after the expulsion of a mole or other morbid growth in the uterus. The lochial discharge has a peculiar odour, and when present is a good sign, but it is liable to be suppressed from a variety of causes, and is entirely absent in some natural cases. Any one of these signs is not conclusive, and does not prove recent delivery, but taken collectively, and above all, if we can learn the history of the pregnancy or anterior condition of the woman, we may arrive at a correct conclusion. We can only arrive at a proper conclusion during the first six or eight days, for at the end of ten or fifteen days, it is impossible to decide the reality of delivery. It is now decided that a woman may be delivered without her knowledge, if completely intoxicated, if stupified by narcotics, a case which I have recently witnessed, if attacked with apoplexy, syncope, delirium or idiocy; and this fact ought never to be forgotten when we are called on to

decide questions of infanticide. Another question of great interest is to determine the survivorship of the mother or infant, when both are lost in parturition, for in some cases, if the infant survives the mother, the father inherits the property he had by his wife, and if the mother, the property passes to her own family. This is the law of tenant by curtesy. It is impossible to decide this question unless some person has been present at the delivery. It was decided by the Court of Exchequer, in 1806, that the motion of the lips of the infant proved its vitality. (Smith.) It is now universally known to judiciary physiologists, that a still born infant may be resuscitated an hour after birth, and one case is recorded, in which the infant was pronounced dead, and placed in a corner of the apartment, and at the next visit, which was at the end of twenty-four hours, it was found alive.

It is almost unnecessary to allude to the substitution of a dead child for a living, as such cases are of rare occurrence.

Women have shewn dead children, to appease the wrath of their husbands, who accused them of sterility. Male's *Forensic Med.* p. 211. Capuron, p. 110. Beck, p. 99. A woman has substituted a living for a dead child. For an account of the appearances of the womb after death, during the first month, the reader should consult Burns, p. 326. The law only requires, that the medical witness shall prove whether the signs of conception were present or not. An infant must be found, in order to bring the charge of infanticide. A woman may be delivered unconsciously, if labouring under coma, or the effects of narcotics. Fodéré, vol. 2, p. 10; and a woman, who died before delivery, was placed on the bier for interment, when the child was born. *op. cit.* 11. These are exceptions to the general rule, namely, that healthy women must be conscious of labour. Dunlop records an extraordinary instance of a lady having a child, though she and her husband did not think she was pregnant. Edition of Beck, p. 107. Again, a woman without assistance, may have her child so suddenly on the floor, in the street, or water closet, as not to be able to prevent its death.

Circumstantial evidence on the incidents of time and place, of situation and character, most generally guides the decision.

With regard to the death of the child before or after delivery, it is a question that may be agitated in civil and criminal cases; as when the succession to inheritance is mooted, or when a pregnant woman has been maltreated, and her child supposed to have died in consequence.

The life of the infant is inferred from the good health of the mother, the progressive increase of the abdomen, and the motion of the fœtus. But healthy females may bring forth dead children; delicate females have produced healthy children, and the increase of the abdomen may depend on moles, hydatids, dropsy, &c. while the motion of quickening has been caused by flatulence. A woman may suppose she feels the motion of the infant, during delivery, yet a putrid infant may be produced. Various causes may act on the mother, and destroy the infant, as unhealthiness of habitation, mode of dress, want of food, or improper use of it, violent exercise, too great labor, violent passions of the mind, venereal excesses, intemperance, hemorrhage, convulsions, syphilis, small-pox, falls, wounds, and accidents, inordinate evacuations; in fact, all the causes of abortion, which were enumerated. Pressure in difficult labors, may destroy the infant; improper use of instruments, fainting and diseases of the placenta, will produce the same effect. Yet the child may recover in despite of most of these causes.

The following signs occurring during pregnancy are indicative of the death of the infant—want of motion in the child; the womb feels as if it contained a dead weight, which rolls according to the position of the woman; the navel is less prominent, the milk disappears; the breasts are brown and flaccid; the mother experiences a sense of lassitude and coldness, accompanied with head ache and nausea. If actually dead, and long retained in the womb, putrefaction sets in, the membranes become black, and fœtid discharges take place. Maceration of the body, presence of the meconium, spots on the skin, violet or brownish blue colour of the lungs, the mass sinking partially or entirely in water, weighing about the seventieth part of the body, and the mouth and throat being filled with a glary sanguinolent fluid.

Many of these symptoms are equivocal. The fœtid dis-

charges and state of the skin and bones cannot be depended on. If the medical examiner be called immediately after birth, he can distinguish these symptoms; but he is seldom called so early, and in general not for many days afterwards. The skin will exhibit marks of putrefaction, and will be of a purplish brown or red colour. The umbilical cord is livid, soft, and easily torn. The cranium and thorax are flattened, the sutures of the head are disunited, the brain is almost fluid, and has a fœtid odour. If the death takes place after birth, there will be characters of viability and complete development, signs of external violence, fractures, bruises, perhaps omission of the ligature on the cord, developement of the pulmonary vessels; the arterial and venous canals are straightened or obstructed, lungs spongy, of a rose colour, swimming in water, also after compression of them; but this happens, if filled with gas, by putrefaction; and if the gas escape by compression, the lungs will sink; the lungs weigh about the thirty-fifth part of the body. The lungs of an infant already dead, if inflated by the trachea, will preserve the air, as if respiration took place; but they will not weigh more than compact lungs. From the fourth to the eighth day after birth, the cord desiccates and falls off, there is a slight desquamation of the epidermis, a yellow colour of the skin, disappearance of thrombus, ecchymosis, or inflammation, and œdema of different parts; on pressing the breasts of either sex, a serous fluid appears. From the eighth to the thirtieth day after birth, the navel will be healed, the foramen ovale, arterial, venous ducts and umbilical vessels will be obliterated by adhesion, the sutures will be more solidified, and the fontanels diminished.

[Dr. Dewees is of opinion, that there are but two unequivocal signs of the child's death, viz. a cessation of pulsation in the umbilical chord when prolapsed; and the scalp forming a soft tumour, in which the bones of the cranium can be felt loose and detached; resembling much in feel the distended membranes. For a very instructive case of the fallacy of the commonly received signs of death of the child in utero, see *Baudeloque*, par 1798.]

CHAP. XI.

Prolicide, Feticide, Infanticide.

MEDICAL jurists have employed the word *prolicide*, to designate the destruction of the offspring, and divided the subject into *feticide*, or the destruction of the fœtus in utero, and *infanticide*, or the destruction of the new-born infant. I have already stated the law on this subject, 9 Geo. 4, c. 31, which makes no distinction between the murder of an infant not viable, that cannot live, and one that is viable. A woman who destroys her infant not likely to live—for example, soon after conception, is assuredly less criminal than one who destroys it at a later period, for, if left undisturbed, it may become fully developed, and arrive at maturity. The first commits an act upon an imperfect being, which has not acquired the perfection necessary to durable existence—she acts almost on a dead body, *non homo est, qui non futurus est*, the other acts upon a perfect being, which nature destines to occupy a place in the class of her family and of society. If the death of a non-viable infant is less criminal than abortion, the punishment of infanticide ought not to be inflicted, for this is inflicting the greater punishment for the lesser crime. But as the law stands at present, the researches which the medical practitioner has to make in cases of infanticide are as follow:—

1. After having ascertained the external appearance of the infant, its volume, length, and respective proportions of its different parts, it is necessary to determine whether there exists any original defect of conformation, or any pathological condition which could induce the death of the infant at the moment of birth, or whether it has not been destroyed by pressure during a laborious parturition.

2. After this examination, we should inspect the internal organs, and decide whether respiration has been complete, and consequently whether the infant has been born alive.

3. To determine how long a period has elapsed since the infant was living; and what was the cause of death, whether natural or violent.

4. To determine whether the woman to whom the infant is attributed, is really the mother.

The most important of these inquiries are the following :— Has the infant died before delivery? Has it died during delivery? Has it died at the moment of birth, in consequence of deformity of the mother, or congenital disease? In the first place we are duly to consider the various causes of abortion, and the signs which indicate the death of the fœtus in utero. The former have been already enumerated; the latter are, the cessation of the motion of the fœtus, the perception of it in different positions by the motions of the woman, the tumefaction or diminution of the breast—signs which are extremely equivocal. But if during delivery the fœtus is not felt to move, the waters are black and fœtid, the scalp soft, flaccid, wrinkled, and easily excoriated, if the cranial bones are more mobile than ordinary; there is much reason to suppose that the fœtus has been deprived of life for some time. After delivery, the proofs of the death of the fœtus having taken place some days previously, are the flaccidity of its limbs, desquamation of the cuticle, the skin purple or brown in certain parts, a serous or sanguineous infiltration of the subcutaneous cellular tissue, especially of the scalp; the umbilical cord soft, flaccid, livid, easily lacerable, the thorax flattened, and its viscera in a state which shews that respiration could not have happened.

If the infant has been destroyed by pressure, by a premature rupture of the membranes, there will be tumefaction of the superior part of the head from uterine pressure, the head is deformed, and the brain will be found apoplectic; or the last sign may depend on compression of the umbilical cord, either by being round the neck or body of the fœtus, or by compression from the parts of the parent. On the other hand, if the fœtus has died from hæmorrhage during labour, in consequence of detachment of the placenta, rupture of the umbilical cord, the body will be of a pale livid colour, the sanguineous system will be empty and collapsed, and if there is a rupture of the cord, its extremity will be jagged or irregular.

It would far exceed my limits, were I even to enumerate the various defects of conformation of the woman, or malpresentation of the fœtus, which may destroy the life of the latter. I can only advise the practitioner to exert his know-

ledge of anatomy, physiology, and pathology, in any case on which he may be called upon to give his opinion. He should most cautiously consider the defects of conformation and pathological degenerescences, and which may impede the functions of respiration. Though it will be seen hereafter, that the proofs afforded by respiration are inconclusive, and that too much importance has been ascribed to them.

Let us examine the degree of certainty of an infant's being born alive, which is presented by signs afforded by the anatomical examination of the *fœtus*. Daniel considered that the thorax was amplified by respiration, and this he determined by measuring the cavity before and after respiration. (*Comment. de infantum nuper natorum umbilico et pulmonibus.*) But the conformation of the chest is subject to too much irregularity, to enable us to arrive at a satisfactory conclusion.—Plocquet laid great stress upon the position of the diaphragm, whether depressed towards the abdomen, or elevated towards the thorax; but artificial respiration will effect these positions as well as natural. The size of the lungs affords no positive evidence. Schmitt has seen them fill the chest before respiration, and so much compressed after that process had continued thirty-six hours, as to render it difficult to decide whether respiration had been established. Besides, there may be uterine, vaginal, and extra-uterine respiration before the complete expulsion of the *fœtus*, and death occur after the birth. The rosaceous colour of the lungs may or may not exist, and is subject to great variety, so that no dependance can be placed on this sign. It may exist in the *fœtus* long before maturity. The obliteration of the umbilical arteries and vein, of the foramen ovale, and of the ductus arteriosus, evidently prove that the infant has been born alive. But this change does not happen at the moment of birth, nor sooner than two or three days, and often not before the first or second week; and consequently this evidence, in most cases, is of little value.

Plocquet instituted experiments to ascertain the weight of the lungs before and after respiration, in comparison with that of the whole body, and concluded that the weight was 1:70 before, and 2:70 or 1:35 after respiration. The accuracy of these conclusions is denied by Chaussier, Orfila, and Schmitt,

of Vienna. Daniel proposed to immerse the lungs, before and after respiration, in a vessel of water, to the side of which a graduated scale was attached to mark the elevation of the fluid. He said that the condensed lungs would occupy less space than after respiration; this is true, but more delicate instruments are required for the execution of this experiment, before we are justified in adopting it in the practice of legal medicine.

Schreger proposed the immersion of the lungs and heart, the large vessels being tied, in water so far back as 1682; and concluded that when they sunk, no respiration had taken place, and if they floated, the respiratory function had been established. This is what is called the hydrostatic test, or pulmonary docimacy, upon which little reliance is placed in any part of Europe at the present period. Numerous objections may be made to this test; 1, the infant may respire before birth; 2, it may respire and be destroyed before birth; 3, an infant may be alive, and may not have respired; 4, the lungs may float before respiration; 5, the lungs may not float after respiration. The infant may respire before birth, and be born dead. (Hunter, Marc, Siebold, Capuron, Osiander, Sabatier, Mahon, Hutchinson.) There may be intra-uterine respiration. *Trans. Royal Soc. of London*, vol. xxvi. *Edinb. Med. and Surg. Journ.* No. 73. *Hufeland's Journ.* 1823. The fœtus may be asphyxiated, or remain enveloped in its membranes and be alive, without respiration. (Buffon, Schurig, Le Gallois.) A delicate immature infant may respire, and yet the lungs will sink in water; and the infant may be born with pneumonia, pulmonary engorgement, or hepatization. (Billiard.) In the two first cases, the air cannot arrive in the bronchial vesicles, and consequently respiration will be incomplete. In the last, we often find the subcutaneous cellular tissue of the mouth and limbs gorged with sanguineous effusion, which induces some persons to suppose violence has been employed. Billiard has pointed out this error. The lungs may float before respiration, from putrefaction, (Orfila,) emphysema, (Chaussier,) or insufflation, (Morgagni.) Dr. Bernt, of Vienna, has put an end to the ancient hydrostatic test, and proposed a new one in its place, which is equally objectionable, in consequence of the

complication of his instruments. (Programma quo nova pulmonum doscimasia, hydrostatica, proponitur. Vienna. 1821.)

It is a matter of great importance to determine how long it is since the infant was living ; or how long it has been dead. If the skin is soft, and covered with the white unctious matter, which is seen at birth, if the stomach contains but a small quantity of mucus, the large intestines are filled with meconium, and the bladder with urine, it is probable that life had ceased at or immediately after birth. If on the contrary, the stomach contains any alimentary substance, and the intestines any matter except meconium, it is certain that the infant has lived for some time. I have already described the change in the vessels peculiar to the circulation of the fœtus. I may mention, however, that the umbilical cord remains soft and humid for fifteen or sixteen hours, and begins to desiccate about the fortieth.

To determine how long the infant is dead, we must consider the state of putrefaction, and all circumstances which hasten or impede it. Warmth and humidity promote decomposition, and a body putrifies more rapidly in running than in stagnant water, or in humid earth, than in an argillaceous, sandy or chalky soil.

The next question is, what has been the cause of death.—This is often involved in impenetrable obscurity, as lesions purely accidental, frequently present the appearances of crime. We should endeavour to determine those that are accidental or involuntary, and those that are criminal.

Death of the fœtus from involuntary causes.—I have already enumerated the most of the causes of the death of the fœtus in utero, and may now caution the young practitioner to bear them in recollection, for otherwise he may commit the most serious errors in giving evidence on the question under notice. Let him remember that diminution or deformity of the pelvis, or preternatural presentations of the fœtus, may cause elongation of the head, tumefaction of the scalp, fractures of the cranial bones, blackness of the face, congestion of the brain, ecchymoses of different parts of the surface of the body, fractures of the limbs and various other lesions, which may be readily mistaken for the result of external violence. Again,

the twining of the umbilical cord round the neck or the compression of the os externum, may induce cerebral congestion, as well as marks of strangulation. If the appearances on the head are caused by external injury, they will often exist in situations on which no pressure could have been made. We must always bear in mind the presentation; and by so doing we can often distinguish natural lesions from injuries.

In those cases in which the neck is compressed by the cord, there will be no excoriation, or desquamation of the cuticle. When there is rupture of the cord during labour, there will be fatal hæmorrhage, but if this accident happens after birth, that is after respiration, fatal hæmorrhage will not always result. If the cord be lacerated by violence, its extremities will be irregular, but the flow of blood will cease. The infant will not be destroyed by hæmorrhage, unless the cord is divided with a sharp instrument. Should the infant have been destroyed by detachment of the placenta, the pale waxy colour of the fœtus, the discolouration of the viscera, the vacuity of the heart and large vessels, explain the cause of death. The infant may be expelled suddenly, and falling on the floor or on any hard substance, the skull may be fractured, and the cord torn. Such cases are related by many obstetric writers. I have narrated three examples, and others are attested by Hamilton, Chaussier, Henke, Klein, Pasquier, Meirieu. *Jour. Univ. des sc Med.* 1820 and 1823. M. Klein collected a hundred and forty three observations on this point, and asserts there was not one infant in the kingdom of Wurtemberg, who had experienced this accident whose skull was fractured, all recovered. Many fell upon the pavement, of these two were affected with momentary asphyxia. Though the cord was lacerated, there was no fatal hæmorrhage. When sudden expulsion of the infant is alleged as the cause of death, it is necessary to examine all circumstances anterior and subsequent, to compare the dimensions of the pelvis, and the volume of the infant's head, to consider the duration of labour, the position of the woman when the infant has escaped, the height of the fall, the substance with which the head came in contact, and finally, the state of the umbilical cord which ought to be

ruptured at the placenta or umbilicus, but not in the middle, and its extremity ought to present the sign of laceration.

When an infant perishes at the moment of birth, by choaking of the air passages, and is afterwards thrown into water or into the water closet, it may be supposed it has been destroyed by submersion or drowning. Every practitioner is aware that infants have been precipitated into the latter situation, and that it is extremely difficult to distinguish whether the fluid in the air passages be mucosity, liquor amnii, or an extraneous fluid introduced. When the fluid contained in the trachea is frothy, we cannot positively affirm that the infant has respired, as insufflation would produce the same effect; or a morbid secretion of gas, or the evolution of air by decomposition. If on the other side, the fluid is limpid and free from air bubbles, we can affirm that the infant has not respired, but this is no proof that it was dead at birth, or at the moment of submersion. The rigid examination of the physical and chemical properties of the fluid, will alone enable us to determine its real nature.

Death of the fetus from voluntary causes.—The new-born infant may be the victim of external violence wilfully inflicted upon it, and it may also perish by the voluntary omission of that succour which is necessary to it in the first moments of its existence; hence we distinguish infanticide by *commission*, and infanticide by *omission*.

Infanticide by omission may occur from exposure of the new-born infant to a temperature too cold or too warm, from being deprived of nourishment or respirable air, and from umbilical hæmorrhage, caused by disruption of the cord. It is difficult to determine what thermometrical degree of heat or cold would destroy life in these cases, but if we find the body of an infant discoloured, naked, or nearly so, stretched on the ground, the great internal vessels congested, and the external or superficial, contracted, and almost empty, and with evidence that respiration has taken place, and at the same time there exists no trace of external injury, there is every probability that death has been caused by cold.

The defect of nutriment is generally combined with abandonment of the infant; and to this cause we should attribute

death, when atmospheric temperature is not sufficiently cold to be destructive, and when we find the alimentary canal dry and contracted.

The neglect of tying the umbilical cord will expose the infant to fatal hæmorrhage; but this is not always the case, and does not afford sufficient evidence of mortal hæmorrhage, as the large vessels should be empty, there should be paleness of the body, viscera and muscles, to prove that death has been caused by loss of blood from the cord. Again, death may take place from this cause, where it was impossible for the mother to afford the necessary aid to the new-born infant.

Thus in cases of placental presentation, the infant may be destroyed by hæmorrhage, but there will be manifest signs in the woman under such circumstances; she may be in a state of syncope from this occurrence, and be unable to save the infant from perishing. The fœtus is often destroyed from separation of the placenta during protracted labours; in both of these cases the placenta will be attached to the umbilical cord. It has been said that the mother, during convulsions, may possibly rupture the cord, or that this may happen from the motion of the infant, or when the woman is delivered in the erect position, the fœtus having fallen on the floor. In the last case, disruption may happen, but it appears very doubtful in either of the former.

It will be recollected that M. Klein has recorded one hundred and eighty-three cases of sudden labours, in many of which the cord was ruptured near the abdomen, and in twenty-one cases within the abdomen, yet there was no fatal umbilical hæmorrhage.

It is also to be remembered that the infant's head, in its passage through the external genitals, is so situated, that its face may be in contact with the liquor amnii or blood, and in this way may be deprived of air, or asphyxiated by impure air; or the head may be expelled, respiration established, the labour cease, and strangulation be effected before delivery. This case is by no means unfrequent, every practical obstetrician has met with it, and should it happen in the first labour, it is evident, that from the ignorance, pain, or syncope of the woman, the infant may be destroyed. It therefore appears

evident that we must duly consider all these circumstances before we can safely conclude there was criminal intention on the part of the mother.

Infanticide by commission, is indicated by contusions, wounds, luxations of the cervical vertebræ, fractures of the extremities, torrefaction or burning, and asphyxia.

Contusions and wounds.—The ordinary effect of contusions, is ecchymosis, which will be more extensive, according to the situation in which it may be placed; but great care must be taken not to confound this appearance with the cadaverous lividity. We should also be cautious to distinguish ecchymoses of the scalp, produced by parturition, from those that result from violence. The former are generally superficial, and situated most commonly upon the vertex, occiput or parietal bones; while those produced by violence are deep and brown, and in various situations, often on the temples. When caused by labour, the infant cannot have respired, and this will be discerned in the manner formerly mentioned. If considerable ecchymoses, contusions, or tumours exist upon an infant that has respired, there is just ground for the suspicion of criminal violence.

In some cases ecchymosis of the neck may be ascribed to pressure of the orifice of the womb, or of the vulva, or by twining of the umbilical cord round the neck, and present the appearance of strangulation; under such circumstances, the respiration may be impeded or prevented, the infant destroyed, the lungs evince the signs of respiration, and the case will be involved in great obscurity and difficulty. Other facts must exist to warrant a correct conclusion.

Luxations of the cervical vertebræ.—When death is produced by luxation of the cervical vertebræ, the ligaments of the vertebræ will be lacerated, the spinal marrow will be bruised or torn; ecchymosis, and sanguineous infiltrations, will indicate that the injury has been inflicted during life, as these phenomena cannot take place after death. It is to be recollected, however, that such luxation may be the effect of injudicious attempts to extract the infant during labour; and it is therefore necessary to ascertain if the parturition has been difficult, and whether any traction has been applied to the infant.

Fractures of the bones or wounds, often depend upon parturition, or upon the violence offered by ignorant and bad practitioners; it is therefore necessary to keep these facts in mind, in determining questions of infanticide from such injuries.

Torrefaction, or burning, is a horrible method resorted to for the destruction of infants, a case of which I grieve to indite, has occurred in this city within a few days. Here it will be necessary to examine all injured parts, and to apply the ordinary proofs to ascertain if respiration had existed. In the case to which I have alluded, the coroner (an attorney) was of opinion that a verdict of manslaughter could not be received. The prisoner, a nursery maid, was acquitted!

Asphyxia.—A new born infant may be asphyxiated by privation of respirable air, by mechanical obliteration of the air passages, by strangulation, by submersion, or by the action of a deleterious gas. The infant will be deprived of air by being placed in a chest, or under a pallet, &c. but as some minutes must elapse between its birth and death, the usual tests will decide that it has respired. Infants have been destroyed, whose nostrils and mouth were filled with linen, hay, earth, &c. to the prevention of respiration; the presence of these substances will enable us to form a proper opinion. Infants have also been destroyed by pressure upon the mouth and nostrils, trachea and thorax, and by forcing the tongue into the fauces; in all of which cases a few inspirations take place, and the pulmonary proof will be decisive.

In all these cases the rupture of the frænum linguæ, the ecchymoses of the neck, the marks of injuries upon the chest, and in the interior of the mouth, with the signs of cerebral congestion, afford very strong evidence against the accused.

The introduction of fluids into the trachea or lungs, is another cause of suffocation; the discovery of the nature of the fluid by chemical analysis, enables us to arrive at a positive decision against the accused. Submersion or drowning is a frequent mode of infanticide. The pulmonary evidence of respiration, and the similarity of the fluid found to that which surrounds the dead body, enable us to decide that death was caused by submersion. In such cases there is usually more or less fluid in the stomach. When death is produced by

strangulation, there will be ecchymoses on the neck and face, with cerebral congestion. The most frequent mode of infanticide, is the precipitation of the infant into the water closet or privy, which may be the effect of accident; but the pulmonary docimacy will decide if the infant has respired. In the cases recorded by Klein, the majority of the women were primiparous. I have known a woman of low stature delivered of her first child by a single pain, and I have recorded similar instances in my work on obstetrics.

In all cases of infanticide, we must be certain that the woman has been recently delivered, and that this event coincides with the age of the infant. The signs of recent delivery have been already enumerated. It is right to mention that infanticide has been effected by the introduction of needles into the brain (Gui-Patin, Brendel, Belloc,) and into the temples or internal canthus of the eye (Brendel,) the neck, region of the heart (Fodéré,) and the abdomen. Infants have been destroyed by poisons, which have been applied by inhalation into the lungs, by commixture with food, absorption through the skin, and by enema. These are to be discovered by the usual tests, which will be mentioned hereafter.

Before concluding this subject, it is necessary to prove the validity of the statement, that the hydrostatic test is no longer considered conclusive. Some of our best jurists cling to it with a degree of tenacity, which, to speak in the mildest terms, is exceedingly remarkable. Drs. Beck and Gordon Smith think it decisive, with due precautions, and a reviewer in the Edinburgh Medical and Surgical Journal, in 1826, perhaps Dr. Duncan, thinks it affords *presumptive* evidence. The opinions of these talented and distinguished professors are of course entitled to respect and much confidence; but it is to be recollected, that the judges of the land will not receive evidence afforded by this test. This is not the place to discuss the propriety of this conclusion. Whether the recent modification of the law on the subject is a sufficient reason, lawyers only can determine. As the law now stands in this country, the questions to be decided in cases of infanticide are, has death been caused by violence, neglect or ill-treatment? The same evidence is required as in cases of homicide. The question of

child murder is still, however, interesting; for if the infant has been born alive, there is presumptive evidence against the accused; and, secondly, the decision of the question will affect the disposition of property in cases of tenant by *cürtesy*, as already mentioned. The law in this United Kingdom, Scotland excepted, and in almost all nations in Europe, is, that a child is born alive, when it evinces the slightest voluntary motion. A curious decision, made on this point by the court of Exchequer at Westminster, has been already recorded.—According to the law of Scotland, the infant must cry to prove its vitality. This is manifestly absurd, as asphyxiated infants have been resuscitated after an hour and a half, as I have often witnessed; and infants have been declared dead—the undertaker sent for, and every preparation in progress for burial, though resuscitation was finally established after some hours.

In cases of still-born infants, I have more than once succeeded in establishing the action of the heart, and one or more inspirations; though complete respiration could not be established; and in such cases, no physiologist can doubt the vitality of the infant.

Dr. Blundell and others have succeeded in resuscitating infants, extracted by *gastro-hysterotomy*, a quarter of an hour after the death of the mother; and a case was recorded in the *Lancet*, where the infant was pronounced by the medical attendant to be dead, it was placed as if dead, and on his visit next day, it was alive.

The unanswerable objection to the hydrostatic and other tests, is this, that when the infant breathes before delivery, which every practical obstetrician can attest, not one of them can prove it out-lived birth. Again, if we credit the records of medicine we can have no doubt but that there may be intra-uterine, vaginal and extra-uterine respiration before complete delivery. Dr. Beck and other jurists seem to doubt the reality of respiration in the first and second case; but it is fair and reasonable to inquire what object could influence those who have narrated such cases? Europeans and Americans are among the number.

Dr. Beck, who is an ornament to his profession, and an

honour to his country, employed all his argumentative powers against the probability of an infant, whose head was expelled, and who had respired, losing its life during delivery. His countryman, Dr. Hosack, has recorded a case in point. But suppose the accused do not allege uterine, vaginal, or extra-uterine respiration, before complete birth, are not the judges warranted to temper justice with mercy, and to give the prisoner the benefit of the reasonable doubt in such a case? Most decidedly.

To return to the hydrostatic test, from which I have so far digressed; I have to state in conclusion, that Drs. Duncan, Beck, and Gordon Smith, maintain it may afford presumptive evidence in infanticide.

But the following facts must be kept in recollection:—1, the lungs of a still-born infant will sink in water, but float on the sixth, seventh, or eighth day, when putrefaction has commenced (Muyer in Schlegel,) and so early as the third day in warm weather (Beck.)

It is universally known, that the body of a drowned person sinks at first, floats when putrefaction has generated air, and rendered it lighter than water; and sinks again, after the extrication of the air so generated. When the lungs of an infant are putrid, the air is near the surface. (W. Hunter, Jaeger,) and can be readily squeezed out by pressure, when the lung will sink; whereas, when respiration has taken place, no pressure will cause the lung to sink, (Marc, Beclard.) The lungs are the last organs in the body which undergo putrefaction, (Camper, Mahon, Beck.) Marc is of opinion that the lungs which have respired, and are afterwards in a state of putrefaction, will always crepitate on incision, which never happens unless respiration has occurred; secondly, on squeezing the putrid lungs of a still-born infant, they will sink, whereas, those of a child born alive, will float.

2. Squeezing the lungs after artificial respiration, will not cause them to sink; in such cases, the lungs swam even with the heart attached, and also when cut into pieces, and carefully compressed, (Mendel, in *Hufeland's Journal der Practischen Heilkunde*, Aug. 1812; Bernt, *Experimentorum Doctrinam Pulmonum Hydrostaticam illustrantium centuria*,

Vienna, 1823; Merzdorff, in Horn's Archiv für Medezinische, Erfahrung, 1823.)

All authors are now agreed, that there is not any difference between natural and artificial respiration in the cases under notice, (Edinb. Med. and Surg. Journ. 1826. v. 26—"and the hydrostatic test can never prove positively that the child was still-born, but only that it had not breathed." Op. cit. p. 389, "at the same time, it will yield strong presumptive evidence." "On the whole, then, it follows, from the preceding statements, that when due precautions are observed, and when certain exceptions and corrections are made, the floating of the lungs afford at least strong *presumptive* evidence that the child out-lived delivery."—p. 374.

Dr. Beck arrives at the following conclusions on this point:

1. That when the lungs float in water, it must be from one of three causes; natural respiration—putrefaction—the artificial introduction of air.

2. As the lungs may float from other causes beside respiration, their mere floating is no proof that the child was born alive.

3. As, however, it is possible to discriminate between the floating of natural respiration and of that which is the result of other causes, it follows,

4. That with due precautions, the floating of the lungs may be depended upon as a safe and certain test that the child has been born alive. The same distinguished jurist arrives at the following conclusions, on sinking of the lungs in water:—

1. That when the lungs sink in water, it must be from one or other of the following causes: the total want of respiration—feeble and imperfect respiration,—some disease of the lungs, rendering them specifically heavier than water.

2. As the lungs may sink from other causes than the absence of respiration, their mere sinking is no decisive proof of the child's having been born dead.

3. As, however, the sinking from the want of respiration, may easily be distinguished from that which is the result of other causes, it follows,

4. That with due precaution, the sinking of the lungs is a safe test that the child was not born alive.

It is very evident, from the preceding statements, that a great degree of caution is necessary in every case, before a decision can be given with confidence; and from the difficulties of the subject, a few practical rules may be laid down for the guidance of physicians and surgeons, when called on to give evidence in cases of infanticide.

The general appearance and condition of the body, should be carefully noted, as also the situation in which it had been found, all instruments which might be used criminally; the size, weight, and length of the infant, the proportion of different parts; the degree of developement, the signs of putrefaction, desquamation of the cuticle, the appearance of the navel, and of every part of the body. We should examine whether there be contusions, ecchymoses, excoriations, and be careful not to confound them with cadaverous lividity: if any lesion is found, its precise situation and extent must be described.—If wounds exist, their form, length, breadth, depth, must be accurately noted. The appearances of the head must be observed, and care taken not to confound those which are produced by parturition with those produced by external injury. We should ascertain, whether or not there be foreign bodies in the ears, nose, eyes and mouth, or marks of injury upon the neck, dislocation of the cervical vertebræ, whether the chest be arched or flattened, and when compressed, if a fluid escapes from the mouth or nose; whether the abdomen be soft or tense, if the umbilical cord be flaccid, dry, moist, detached, cut or lacerated, and its exact length, or if the navel be red, in a state of suppuration or cicatrization; if the testicles have descended, and finally, whether there are dislocations or fractures of the superior or inferior extremities.

Such are the principal points to be attended to, in the inspection of the external condition of the body; all appearances should be taken down in writing, and the document carefully preserved, as the witness may produce it at a trial, or refresh his memory from it; whereas he cannot use a copy in either case, especially in this country. The next part of our duty is to examine the external parts of the body, and here also the appearances are to be recorded.

Autopsy-Dissection.—Medical jurists are not agreed upon the

method of dissection, in cases of infanticide. Drs. Beck and Smith think it most convenient to commence the dissection with the mouth and cavities leading to the chest. MM. Chausier, Renard, Briand and others, commence with the spinal canal, then proceed to open the head, thorax, mouth, pharynx, and passages to the chest and abdomen, and the abdomen. The former mode is more convenient, and I think the best. It is briefly as follows:—

The neck is to be placed on a block of wood, so as to render its anterior surface prominent. It is right to observe, whether the mouth be open or closed, if the tongue be protruded, or turned back into the fauces. An incision is then to be made from the lower lip to the upper extremity of the sternum; and another along the lower edge of the inferior maxillary bone, the integuments are to be dissected back, and all marks of violence, ecchymoses, &c. noted. The lower jaw is now to be divided at its symphysis, the parts attached to its internal surface divided, the tongue should be depressed, when there will be a complete view of the mouth and pharynx. We should carefully observe whether there be any foreign body or sanguinolent appearance, and if the glottis and epiglottis be natural, and if there be fluid in the larynx or trachea;—the abdomen is next to be examined, an incision is to be made from the sternum to the spine of the ilium on each side, the flaps turned back, and the umbilical vessels observed and tied. We are next to observe the appearances of the abdominal viscera, and to note every thing unusual. We should ascertain if the umbilical vessels be empty, or contain coagulated blood, if cut or lacerated, if the ductus venosus be permeable or obliterated. The size of the liver should be noticed, its large vessels tied, and the organ to be removed and weighed; but previous to its removal, the gall bladder is to be inspected, the colour of its bile noted, or whether it be entirely empty. The stomach should be removed, after its apertures having been tied, and its contents, if any, carefully examined. We should further observe whether the intestinal canal contains meconium, fæces or other matter, or presents any sign of disease; and lastly, if the bladder be empty, or full of urine.

The cavity of the thorax may be opened in the ordinary

manner, but on dissecting the integuments, every appearance of lesion is to be noted, and a minute examination instituted, in order to discover if the chest has been punctured. The cartilages of the ribs are to be divided with a scissors, in preference to a scalpel. We should next examine the size and colour of the lungs; if of a dull red or rosaceous, if these organs fill the thoracic cavities, and if the tendinous centre of the diaphragm be depressed. We are to take into account the size of the heart, the dimensions of its cavities, if they contain blood, the colour of its tissue, the degree of opening or closure of the foramen ovale and ductus arteriosus, the presence of fluid or coagulated blood; always recollecting that the most dependent portion of the lungs, is engorged with blood, and brownish, and that the site of this engorgement will vary according to the position in which the body had lain while becoming cold, and that this appearance will be greatest in proportion as the patient has not lost blood. After having examined the œsophagus and trachea, and noted their appearances, the large vessels are to be tied, the lungs and heart removed, and the former subjected to the hydrostatic and other tests, in the manner hereafter mentioned. In examining the vertebral column or spine, an incision is to be made from the occiput to the sacrum, the integuments and muscles carefully removed, and the annular portion of the vertebræ divided with a strong scissors, which may be introduced under the fifth lumbar vertebræ. During this examination, we must observe all lesions, ecchymoses, dislocations, fractures, wounds and punctures; but we must not consider the congestion of the spinal veins or the presence of limpid, yellow or viscous serosity, as the effect of violence; for these are ordinary occurrences, and will be found in such situations as the posture of the body favours.

The best mode of opening the head, is to make an incision from root of the nose to the third or fourth cervical vertebra, and another from ear to ear, the integuments are to be dissected back, and all lesions carefully examined and noted, as wounds, punctures, fractures, &c. A small opening is to be made with a scalpel, through the anterior fontanelle, and the sutures divided by a scissors, great care being taken not to wound the

sinuses or larger vessels: the bones of the cranium can be easily separated in this manner. We are now to ascertain if there be blood in the ventricles, or on the base of the brain to remove the cerebrum and cerebellum, and carefully dissect both.

The examination of all the organs having been completed, the inferences to be drawn will be evident, after a careful perusal of the statements made in the course of this work. But to render the information as complete as possible, it is necessary to describe the method of instituting the hydrostatic test.

The water in which the lungs are to be placed, must not be too hot nor too cold, but of the temperature of the atmosphere; it should contain no salt. If these precautions are observed, the lungs, with the heart, will float or sink in water; if they float, it is proper to notice, whether, upon or under the water; if they sink whether gradually or rapidly.

The lungs are to be taken out of the water, the large vessels tied, the heart separated, and the organs then weighed to ascertain the proportion they bear to the weight of the body. They are to be immersed again, then the lobes separately, and lastly, each to be cut in small pieces; on incising them we should note if there be crepitus, the tissue compact, or in a morbid condition. Should the fragments float, they are to be firmly squeezed in the hand, and again placed in the water. The inferences to be drawn from these experiments are the following, according to Dr. Beck. When there is nothing on the body of the infant to account for its death during delivery, the lungs untouched by putrefaction or artificial respiration affording a crepitus on incision, floating entire or in segments on the surface of the water, and if the segments float after firm pressure, then the evidence is irresistible that the infant was born alive, and enjoyed perfect respiration. If only the right lung, or its pieces float, the respiration has been less perfect. If some pieces only float, while the greater number sink, respiration has been still less complete. If neither the entire lungs nor any section of them float in water, the evidence is decisive that the child never respired.

It is right to mention, that Professor Bernt is of opinion

that Ploucquet's test affords decisive evidence in a few cases, and no more than presumptive evidence in the rest. It is scarcely necessary to remind the medical jurist, that he should ascertain if the woman has been recently delivered, and learn the whole history of her case. The signs of recent delivery have been already enumerated. He should inquire whether the labour was *sudden*, in what position it took place, if the infant was born immediately after the rupture of the membranes, or how soon after; if delivery took place without assistance, or what assistance was afforded; if there was hæmorrhage before, during, or after delivery; on what day and hour did labour commence, and did the birth take place; if the woman was insensible before, during, or after delivery; if the infant respired, if not, what attempts were made to resuscitate it. All these questions should be put in a mild manner; the solemn duty of the medical jurist being to ascertain fact, and to take no interest in the prosecution or acquittal of the accused; he should confine himself solely to the duties of his profession, and strenuously avoid putting, what lawyers call "leading questions," or intimidating the accused, or violating one of the best principles of our humane laws, by extorting a confession, or inducing a suspected female to criminate herself. His sole duty is to give the received opinion of his profession, regardless of consequences, but on all doubtful cases, leaning to the side of mercy.

In the foregoing dissertation I have only discussed the principal points which claim attention, in cases of infanticide; as many more particulars will be found in the course of this work, more especially in the article on homicide, where the danger and mortality of wounds, contusions, and fractures, will be duly considered. Enough, however, has been said to warn the practitioner against committing errors, which have but too often led to the execution of innocent women: I might illustrate this assertion from the authority of Dr. W. Hunter, but his opinions are too well known to require expression in this place.

[The state of our knowledge as regards the subject of infanticide, may be thus summed up:—

1. Before the termination of the fifth month, it may be assumed as a general rule, that a fœtus cannot be born alive.

2. That it would be safe to affirm that a child which has not reached the seventh month, is incapable of sustaining an independent existence, although there have been instances to the contrary.

3. Even at the seventh month the chances of surviving are very few.

4. That a child has the greater chance of surviving as it approaches the natural term, but that from certain peculiarities in the functions of the uterus, it will be more likely to survive birth at the seventh than at the eighth month.

5. A child may be pronounced *viable* which has been heard to cry, and in whom organization is perfect; and *immature* when the reverse is the case.

6. When a child is pronounced viable, we must depend in a great measure on the appearance of the organs of respiration and circulation to determine whether it was born alive.

7. The tests drawn from the condition of the foramen ovale and ductus arteriosus, cannot be depended on except as collateral evidence; where, however, the foramen is closed or nearly so, and the duct is contracted towards the aorta, and is much less than the pulmonary trunk, the presumption would be that respiration had taken place.

8. That although there is a change in the form of the thorax and diaphragm, this is too variable to place much dependence on, except as substantiating other proofs.

9. The changes in other organs, as the liver, bladder, &c. are subject to the same objections.

10. That our great dependence must be, on an examination of the alterations which occur in lungs after a child has breathed; of these,

11. The change in colour cannot be relied on with certainty, but still the presumption would be very strong, in cases where portions of the lungs are of a scarlet colour, whilst other parts retain their fœtal density and colour, that respiration had taken place.

12. The proof devised by Daniel, as to the relative volume of the lungs is too complex, and exacts too much accuracy to be depended on.

13. The static test proposed by Ploucquet is too uncertain

and variable to furnish more than presumptive proof of respiration having been established, at the same time it should always be tried.

14. The surest test, under all circumstances, appears to be the hydrostatic, or that derived from the floating or sinking of the lungs.

15. But as the lungs may float from other causes than their having been inflated by natural respiration, we ought not from that circumstance to decide that the child was born alive.

16. Yet, as it is possible to discriminate between the floating induced by natural inflation, from that produced by other causes, the floating of the lungs is a safe test of the child having breathed before or after birth.

17. That the lungs sink in water from never having been dilated by the act of respiration, but it may also occur from disease, &c.

18. Therefore, their mere sinking is not a strict proof of the child never having breathed.

19. But the sinking, from their never having been naturally inflated, can be distinguished from that induced by other causes.

20. Therefore, with due precaution, the sinking of the lungs is a safe proof of the child never having breathed.

21. But neither the hydrostatic, nor any other test should be relied on to the exclusion of others, it requiring the concurrence of several to decide with certainty and safety.

From the above, it will be perceived that we agree with Dr. Beck, in placing considerable reliance on the hydrostatic test; not, however, considering that it should be relied upon alone, but at the same time believing, that with due precaution it is the best of any of the tests hitherto proposed.

As respects the laws of different countries having a bearing on this subject, we must again refer such of our readers as wish to be acquainted with those of foreign states, to the "Elements of Medical Jurisprudence." In our own country, those commonwealths in which there is no statute law touching on infanticide, all trials for this crime must be conducted by the common law, and accessory circumstances can only be considered as proving the intent.

In *Massachusetts*, concealment of the birth of a bastard child is punishable by a fine not exceeding £50. For concealing the death, whether from violence or not, the mother is punished by being set on a gallows with a rope round her neck for one hour, and is to give recognizance for good behaviour, at the discretion of the court. For the wilful murder of an infant, the punishment is death.

In *Vermont*, if a woman be privately delivered of a bastard, and it be found dead, and if there be presumptive evidence of neglect or violence on the part of the mother, the penalty is a fine not to exceed \$500, and imprisonment for not more than two years; one or both at the discretion of the court.

In *Connecticut*, if a woman conceal her pregnancy and be secretly delivered of a bastard, she is punishable by a fine not exceeding \$150, or imprisonment for not more than three months. For concealing the death, so that it be not known whether it was born alive or not, she is to be set on a gallows with a rope round her neck, and be imprisoned for not more than one year.

In *New Hampshire*, the law for concealing the death is the same as in *Massachusetts* and *Connecticut*, except that the imprisonment may be for two years, or in lieu of this a fine not exceeding £300.

In *New Jersey*, concealment of pregnancy and delivery, is a misdemeanour, punishable by fine and imprisonment. Concealing the death is punishable by fine and imprisonment at hard labour.

In *Pennsylvania*, the act of May 31, 1781, made the concealment of the death of a bastard child conclusive evidence to convict the mother. "And all and every person who shall counsel, advise, or direct such woman to kill the child she goes with, and after she is delivered of such child she kills it, every person so advising and directing shall be deemed accessory to such murder, and shall have the same punishment as the principal shall have." This law has since undergone the following alterations. By the act of 5 April, 1790, the constrained presumption that the child whose death is concealed was therefore murdered by the mother, shall not be sufficient evidence to convict the party indicted without probable presump-

tive proof is given that the child was born alive. And that of the 22 March, 1794, sect. xviii. declares, "the concealment of the death of any such child shall not be conclusive evidence to convict the party indicted of the murder of her child, unless the circumstances attending it be such as shall satisfy the mind of the jury that she did wilfully and maliciously destroy and take away the life of such child."

Thus the law of this state, and that of England, stand much on the same ground, except that in England, the jury may find the accused guilty of concealment, if acquitted of the murder, whereas by our law, as decided in the case of *Respub. vs. Sarah Boyle*, it requires two counts, one for the murder and the other for the concealment.

In *Rhode Island*, the law is much the same as that of Pennsylvania.

In *Louisiana*, the penal code considers infanticide as murder.]

CHAP. XII.

Medico-legal questions, relating to violation of Women.

THE questions arising out of this subject, which may be submitted to medical jurists for their decision, are as follow:—

1, Are there certain signs of defloration? 2, Can we distinguish between forcible violence against the consent of the accuser, and whether the signs of violence be not attributable to the introduction of other extraneous bodies into the external sexual organs? 3, And whether a woman can be violated without her knowledge? And 4, whether pregnancy can follow violation?

1, Are there certain signs of defloration? To determine this question, we must decide whether there be certain signs of virginity. We have to refer to anatomical and obstetric works, for a description of the external genitals in a virginal state, to enable us to form a correct decision upon this question. The external genital organs are those connected with the subject: a brief description of which, however, is necessary in this place.

In virgins, the external labia are thick, firm, elastic, and internally of a vermillion or rosaceous colour, their edges in apposition, so as to close completely the orifice of the vulva. They are soft, pale, and separated in women accustomed to venereal enjoyment. But these characters are not to be depended on, as women of strong constitutions may have the signs of virginity; and virgins the latter signs from leucorrhœa, or fluor albus. In fact, no positive conclusion can be deduced from the state of external or internal labia. The same must be said of the frænum labiorum; it may or may not be ruptured during coition, and every obstetrician of ordinary experience, can attest its perfect condition during parturition. Besides, it may be ruptured by falls, external injuries, or by the passage of solid morbid growths. The orifice of the vagina is usually narrow, but it may be relaxed by leucorrhœa, or may be larger in a virgin, than in a woman who has been violated. In some women it is particularly closed by the hymen, a membrane long held as the surest sign of virginity.

It is now universally known, that a great variety of causes besides coition may destroy this membrane, as sudden exertion of the lower extremities, leucorrhœa, masturbation, excoriation, confined menstrual fluid, and various morbid growths, both solid and fluid. It does not always exist even in infants, and does not entirely close the vagina at puberty, so that the introduction of the penis may be effected, if not disproportionate, (Teichmeyer, Brendel, Severin, Pineau, &c.) Indeed women have been in labour, and the hymen perfect. (Mauriceau, Ruysch, Paré, Meckel, Walter, Baudelocque, Smellie, Capuron, Nægele, &c.) It is therefore no infallible sign of virginity, nor is its absence alone a positive proof of defloration. The carunculæ myrtiformes were long considered as the remains of the hymen, but this is denied by Hamilton, Conquest and Velpeau. They have been seen in infants and virgins, and are no proof of defloration, because, like the rugæ of the vagina, they are only effaced by repeated coition. Dr. Beck admits, that many of the above signs are equivocal, but if taken in connexion with one and other, he thinks it cannot be possible that all mentioned in the chaste state, can

be absent without a strong suspicion against the female. I cannot assent to this conclusion, as I think experience has proved that all the physical signs of virginity are equivocal, and all may be absent from causes already enumerated, without room for a full grounded suspicion against the female. From my own experience and the result of my researches, I can arrive but at one conclusion, that there are no positive signs of virginity, and consequently those of defloration are extremely uncertain; this, I find, is the opinion of the faculty of Leipsic, of Metzger, and of Morgagni. The presence of the reputed signs of virginity afford no decisive proof of chastity, and their absence no decisive proof of incontinence. If all the reputed signs described above exist, the female feels offended at the examination, or rather displays evidence of shame; if her morals, age, and education have been good, then there are strong grounds for supposing her in possession of her chastity; and if all the contrary signs exist with a suspected reputation, and an equivocal virtue, then there is reason to pronounce a contrary opinion.

It is necessary to recollect the habit of body and age of the patient, as signs of virginity are most perfect between puberty and the twenty-fifth year, after which period they become more equivocal.

When defloration of any young female has recently taken place, the signs are very evident. The laceration of the hymen (if it exist), the presence of its remains covered with clotted blood, the contusions of the labia majora, and minora, of the clitoris, and carunculæ myrtiformes, the redness and tumefaction, or laceration of all the external genitals, leave no room to doubt. But almost all these marks will generally disappear in three or four days. They disappear almost instantaneously in chlorotic and leucorrhœic females. (Briand, Manuel de Medicine Legale.)

Second question—Can we distinguish between defloration, the result of voluntary carnal commerce, or that which has been effected by violence, or the introduction of a foreign body into the vagina?

It is extremely difficult to determine this question in a positive manner. Many medical jurists are of opinion, that con-

tusions, lacerations, inflammation of the vulva, thighs, arms, breasts, and other parts of the body, prove that violence had been used, and that the female did not consent. But it is to be recollected that many women will not consent without some force, and also that injuries of the genital organs may follow a first congress, when the sexual organs are disproportionate.

Every person knows, says a French jurist, that at the epoch of puberty, young girls of an erotic temperament, employ foreign bodies for the gratification of their desires, and may cause laceration or contusion of the external genitals; and who does not know that these excesses have brought on delirium, and who is ignorant of the deplorable effects of onanism. (Briand.) Again, women have injured the organs for the purpose of accusing an innocent man of rape. (Fodéré.)

In all cases of defloration we must consider the age, strength, and state of mind of both parties. When this crime is perpetrated on children of a tender age, the disproportion of the organs will be followed by the marks of injury already enumerated. On the other hand, a strong woman may accuse a delicate man, or boy, or one who is impotent. It is held by most jurists, that it is almost impossible, at all events exceedingly doubtful that one man can violate an adult female. (Mahon, Farr, Fodéré, Capuron, Beck, Briand, &c.) The exceptions to this rule are, when the female labours under insensibility from violence, syncope, or fainting, narcotics, intoxication, and according to the faculty of Leipsic, when she is asleep.

It is indispensably necessary to examine the sexual organs of both parties. The man may be impotent from the causes already described; the penis may have been destroyed by sloughing or cancer, &c., or the organ may be so small as to cause no pain on its introduction into the vagina. Zacchias mentions a singular case of this last kind. The woman may labour under a variety of malformations which preclude the generative act. A speedy examination should be made in all cases, for the reasons stated in a preceding paragraph.

The state of mind of the woman must be kept in view, as

an idiot at twenty or upwards can make less resistance than a girl of fourteen.

Venereal infection is a proof of violation, when it coincides with the time at which the crime is alledged to have been perpetrated, that is, if it appears from the third to the eighth day, and, above all, if the accused is affected with the disease. Every well informed practitioner is aware that gonorrhœa or syphilis cannot manifest itself immediately after congress, and therefore, if found on the female, it is a strong proof against her.

Every well informed physician and surgeon is conversant with the purulent discharge of female children of scrofulous and delicate habits, from the period of dentition to the age of puberty; such discharge is seen almost every day in dispensary and hospital practice among the poor. It is described by John Hunter, Hamilton, Astley Cooper, Dewees, Jewel, and the author himself, and is often mistaken by ignorant practitioners for gonorrhœa.

There is no fact better attested than this, that purulent discharge from the genital organs of both sexes, from the period of infancy upwards, may arise from causes purely physical, chemical, or specific. Venereal excess between two persons whose organs are healthy, may cause a discharge more or less intense in one or both; but still the symptoms are not so violent as in gonorrhœa. Even children of both sexes are subject to genital discharge before and during dentition, from worms, or from local injury of the sexual organs, as in cases of defloration of female children. The last fact is one of great importance to those who are called on to give evidence before magistrates, or in courts of justice, in charges of rape. The accused may be free from gonorrhœe, and declare that if the child is infected it is not by him. The medical man should ascertain the lesions, and discriminate between purulent discharge, the consequence of violence and inflammation, and that arising from infection. The history of the case will enable him to form a correct opinion in the majority of instances, and he ought to ascertain whether the child has not been subject to a discharge previously to the supposed offence. In a case in which I was consulted, and which is recorded in the

Lond. Med. and Surg. Jour. 1830, vol. v. the girl had laboured under purulent discharge five years before, and was then ten years old and exceedingly delicate. On that occasion I afforded abundant evidence of the liability of female infants and of girls to the age of puberty to purulent discharge from the vagina. We know that equitation, injury on the perineum, calculus in the bladder, stricture of the urethra, hæmorrhoids, gout, rheumatism, certain cutaneous diseases, as herpes, impetigo, serpigo, lepra, &c. the terebinthinate medicines, lytta, spices, diuretics, sexual intercourse during the catamenial or lochial evacuations, the introduction and long retention of a bougie in the urethra, irritation in different parts of the alimentary canal, constipation, certain aliments and medicines, new beer, asparagus, &c.—in a word, diseases of organs which strongly sympathize with the genito-urinary system may cause simple gonorrhœa. Cases are recorded in which gastro-enteritis, diseases of the respiratory system, coryza, cynanche, pneumonia, and asthma, had terminated by a copious discharge from the urethra. It is admitted that there is a reciprocity of action between the mucous, serous, and fibrous tissues, the digestive respiratory systems, urinary apparatus, the urethra, and uterine system, and that none of these systems can be irritated or inflamed without affecting the urethra or uterine apparatus. So also the latter organs cannot be affected without implicating the former tissues in various degrees. Dr. Titley relates a case in which he supposed venereal gonorrhœa existed for a period of three days, and for which he prescribed the usual remedies, but before the patient had taken the medicine he was seized with a smart attack of gout, and in a few hours the urethral discharge had vanished.

Capuron was consulted in a supposed case of defloration, in which a purulent discharge escaped from the vagina; the external genitals were ulcerated; but that able physician ascribed it to the cause under notice, and the girl was soon restored to health. M. Biessy, of Lyons, relates a case in which all the surgeons of that town certified a child had been violated in consequence of the presence of a discharge. He denied it, which induced the Mayor to request five physicians to examine the child separately, without knowing of the applica-

tion to each, and they all agreed that she only laboured under a simple mucous discharge. (Manuel Medico-Legale, &c.)

The following case is related by the revered Dr. Percival, in his admirable *Ethics*:—

“Jane Hampson, aged four, was admitted an out-patient of the Manchester Infirmary, Feb. 11, 1791. The female organs were highly inflamed, sore, and painful; and it was stated by the mother, that the child had been as well as usual, till the preceding day, when she complained of pain in making water. This induced the mother to examine the parts affected, when she was surprised to find the appearances above described. The child had slept two or three nights in the same bed with a boy fourteen years old, and had complained of being very much hurt by him during the night. Leeches and other external applications, together with appropriate internal remedies, were prescribed; but the debility increased, and on the 20th of February the child died. The coroner’s inquest was taken; previous to which, the body was inspected and the abdominal and thoracic viscera found free of disease. From these circumstances, Mr. Ward, the surgeon attending this case, was induced to give it as his opinion, that the child’s death was caused by external violence; and a verdict of murder was accordingly returned against the boy with whom she had slept. Not many weeks elapsed, however, before several similar cases occurred, in which there was no reason to suspect that external violence had been offered, and some in which it was absolutely certain that no such injury could have taken place. A few of these patients died. Mr. Ward was now convinced that he was under a mistake in attributing the death of Jane Hampson to external violence, and informed the coroner of the reasons which induced this change of opinion. Accordingly, when the boy was called to the bar at Lancaster, the judge informed the jury, that the evidence adduced was not sufficient to convict; and that it would give rise to much indelicate discussion, if they proceeded to the trial; and that he hoped, therefore, they would acquit him, without calling witnesses. With this request the jury immediately complied. The disorder in these cases, says Dr. Percival, had been a typhus fever, accompanied with a mortification of the pudenda.”

Mr. Kinder Wood relates cases of a disease somewhat similar, in which there is fever for three days, inflammation of both labia, clitoris, nymphæ and hymen, followed by sloughing and death. The mortality was ten in twelve, and the disease considered a peculiar kind of eruptive fever. (Med. Chir. Trans. vol. vii.)

I have already recorded a case of a delicate scrofulous girl, aged eleven years, who had purulent, or rather mucous discharge from the external genitals, and accused a young man of eighteen, whose genitals were developed in an extraordinary degree, of having violated her person. Two apothecaries swore the girl had been violated, a rape committed, and gonorrhœa communicated. Dr. Gordon Smith, Mr. Whitmore, and myself, were of a different opinion. The frœnum labiorum was perfect, the hymen absent, a discharge without any sign of inflammation the day after the alledged intercourse, and a small dark spot, observed by Dr. Smith only on the thigh. The examinations of the medical men were made at different times. The case was grievously mismanaged for the prisoner; the only evidence in his favour was Dr. Smith's, which was contrasted with that of the two medical witnesses for the prosecution. The man was found guilty, and sentenced to six months imprisonment, and lectured by the chairman of the Middlesex Sessions (Mr. Const.) on his good fortune—that he was not hanged. The mother had informed Dr. Smith that her daughter had had the discharge since she was five years old. The medical witnesses for the prosecution declined examining the person of the prisoner, though those on his side had assured them he had no discharge from the urethra, and had not had any for six months previously. This case was tried in November sessions, 1829. When the girl was examined at the trial, and asked why she did not tell the domestic who disturbed the parties during the alleged intercourse, she replied, “she forgot it.” A girl of eleven years old, violated by an adult, forget it! Cases like the present are unfortunately of too frequent occurrence, and are attested by Sir A. Cooper in the following impressive language:—

“There is a circumstance which I am exceedingly anxious

to dwell on,—I allude to a discharge from young females; and I hope that there is not one here this evening but will be strongly impressed with the importance of the subject. Children from one year old, and even under, up to puberty, are frequently the subjects of a purulent discharge from the pudendum, chiefly originating beneath the preputium clitoridis; the nymphæ, orifice of the vagina, and the meatus urinarius, are in an inflamed state, and pour out a discharge. The bed linen and rest of the clothes are marked by it. It now and then happens, to a nervous woman to be alarmed at such an appearance, and she suspects her child of having acted in an improper manner; and perhaps, not quite clear herself, she is more ready to suspect others, and says dear me, (if she confesses,) it is something like what I have had myself. She goes to a medical man, who may unfortunately not be aware of the nature of the complaint I am speaking of, and he says, ‘Good God! your child has got a clap.’ (A laugh.) A mistake of this kind, gentlemen, is no laughing matter; and, though I am glad to make you smile sometimes, and like to join you in your smiles, I cannot do it on the present occasion, for it is too serious a matter. I can assure you a multitude of persons have been hanged by such a mistake. I will tell you exactly what takes place in such cases; the mother goes home, and says to the child, ‘Who is it that has been playing with you? who has taken you on his knee lately?’ The child innocently replies, ‘No one, mother; nobody has, I declare to you.’ The mother then says, ‘Oh, don’t tell me such stories; I will flog you, if you do.’ And thus the child is driven to confess what never happened, in order to save herself from being chastised: at last she says, ‘Such a one has taken me on his lap.’ The person is questioned, and firmly denies it; but the child, owing to the mother’s threats, persists in what she has said. The man is brought into a court of justice; a surgeon, who is ignorant of the nature of the discharge I am now speaking about, gives his evidence; and the man suffers for that which he never committed. The mother is persuaded, if there be a slight ulceration on the parts, that violence has been used, and a rape committed: she immediately says, ‘What a horrid villain must he be for forcing a child to such an unnatural

crime, and communicating to her such a horrible disease ! I should be glad to see him hanged.'

" If I were to tell you how often I have met with such cases, I should say that I have met with thirty in the course of my life. The last case I saw was in the city: a gentleman came to me, and asked me to see a child with him, who had a gonorrhœa on her. I went, and found that she had a free discharge from the preputium clitoridis. I said that there was nothing so common as this. There was considerable inflammation, and it had even proceeded to ulceration, which I told him would soon give way to the use of the liquor calcis with calomel. 'Do you tell me so? (he replied;) why, suspicion has fallen on one of the servants, but he will not confess. If he had appeared at the Old Bailey, I should have given my evidence against him; for I was not aware of what you have just told me.' I told him that, if the man had been hanged by his evidence, he would have deserved to be hanged too.

"I am anxious that this complaint should be known by every one present, and that the remarks which I have made should be circulated throughout the kingdom. When the child has this discharge, there is a heat of the parts, slight inflammation, and this sometimes increases, and goes on to ulceration. This disease sometimes occurs in children at the time of cutting their teeth."—*Lectures on Surgery.*

Dr. Dewees, the eminent professor of midwifery, in the University of Philadelphia, has also given an excellent account of the morbid discharge under notice, in his *Treatise on the Physical and Medical Treatment of Children*, pp. 326, 435. He says, "We occasionally find that very young children have a discharge from within the labia, of a thin acrid kind, or of purulent appearance. When this occurs in very young subjects, it almost always proceeds from a neglect of cleanly attention to these parts, either by withholding a frequent use of lukewarm water, or permitting the child to remain too long wet. * * * * Children, however, of a more advanced age, have also discharges of a purulent character, that seem to arise from a morbid action of the mucous membrane of the vagina or labia. This frequently shows itself about the *fifth* year, and may continue, if neglected, to almost any period.

Parents, therefore, cannot be too much on the alert when this discharge is discovered on their children; nor too early in the application of suitable remedies for its removal. It is in a great measure owing to this neglect, that fluor albus or whites become so common, and of such difficult management in adult age. If not interrupted in the beginning of its career, it is apt to continue until the period of puberty, over the phenomena of which it but too often creates an unfriendly influence."

Orfila gives a table to enable medical jurists to discriminate in all cases of stains on linen, whether by spermatic, leucorrhœal, gonorrhœal, lochial, mucous and salival fluids. The evidence afforded by this table, is far from being positive, and I therefore omit it.

Third question.—Can a woman be violated without her knowledge? Decidedly she can, if under the influence of insensibility from violence, fainting, asphyxia, narcotics, or intoxication. I have recorded a case in which a female was impregnated during inebriation, and was of course unconscious of it during the first seven months of utero-gestation. She felt much offended, when I hinted my suspicions as to her being pregnant, but soon afterwards her paramour revealed the secret to me. Though it is difficult to suppose a woman can be violated during sleep, yet under some circumstances it seems to me very possible. A married woman who has had children, whose sexual organs are dilated, may be violated during sleep; but a virgin could not be deflowered without her being awake. Drs. Beck, Gordon Smith, Bartley, Fodéré and Capuron, doubt the possibility of a married woman being violated during sleep.

Fourth question.—Can violation be followed by conception? It has been long decided in the negative, as it was supposed that women who were influenced by the depressing passions could not conceive, (Bartley and Farr.) Capuron, Fodéré, Beck, Good, &c. agree with the majority of the profession, that conception may happen, and is not accelerated or prevented by the volition of the sexes. This is the received and only rational opinion. How many women anxiously wish for children and have none, and vice versa. I have discussed this question very fully in my work on Midwifery.

From the foregoing observations, it is evident that medical science does not furnish positive proof of any of the questions discussed in this article, but merely probable and presumptive evidence. I may observe in conclusion, that the probabilities are greatest when a child of 5, 7, 9, or 10, is the accuser, after a due consideration of the sexual diseases of this period of life. Her age excludes all appearance of consent, as she cannot have desire, her organs being undeveloped, as stated in the section on disqualifications for marriage, nor is it likely any foreign body will be introduced. The case will be stronger attested by any other marks of violence. However, great caution is required in these cases, as depraved mothers have induced their children to make accusations against innocent persons.

The only other medico-legal question connected with morals is sodomy. In these horrible cases it is said, there will be inflammation, excoriation, or syphilitic ulceration, dilatation of the sphincter, scirrhus of the rectum, hæmorrhoids. It is to be recollected that syphilitic excrescences are often seen on the perineum and about the anus, caused by disease from the genitals, where no suspicion can be entertained; "no man," says Dr. Beck, "ought to be condemned on medical proofs solely." The physician should only deliver his opinion in favour or against an accusation already preferred—Zacchias.

[Of the long catalogue of human crimes, there is no one perhaps, which has given rise to so many false accusations as that of rape; the records of criminal jurisprudence in every country bear ample testimony of this; fortunately, however, for the just administration of the laws, evidence which was formerly considered as decisive in establishing the occurrence of this offence, is now deemed nugatory or insufficient.

The French code ordains imprisonment for rape, if consummated or attempted with violence, and if committed on a child under fifteen years of age, the offender is to be condemned to hard labour.

In England, this crime is felony, without benefit of clergy; and by common law, a boy under the age of fourteen, is considered as incapable of committing it, on the ground of imbecility of body.

In New York and Louisiana, the punishment is imprisonment for life, and an assault with intent to commit rape, is punishable by fine and imprisonment, or both.

In Pennsylvania, Virginia, New Jersey, Vermont and New Hampshire, it is imprisonment for a long period, with or without fine, as the particular law may direct.

In Delaware, Connecticut, Massachusetts, South Carolina and Illinois, the commission of this offence incurs capital punishment.

Many points always come under discussion on a trial for this crime, some grounded on the main question, namely: what is rape? all parties agree that it is a carnal knowledge of a woman against her consent, by force, menace, or a fraud of such a character as to deprive her of her powers of resistance. But juris-consults by no means are in unison as regards what constitutes this carnal knowledge. Some of the most eminent legal authorities in England have deemed, that penetration without emission was sufficient, whilst on the other hand, numerous cases of acquittal have taken place from the inability of the woman to prove the latter circumstance.

In Pennsylvania, Illinois and Louisiana, (and perhaps in other states,) rape is considered accomplished by the commencement of a sexual connexion, proof of the circumstance that usually terminates it, not being required.]

CHAP. XIII.

Medico-Legal Questions relating to attempts against Health or Life. Homicide by Contusions and Wounds.

UNDER this head we have to consider. 1, contusions, wounds, and homicide by them; 2, homicide by asphyxia, strangulation, suffocation, submersion or drowning, asphyxia by non-respirable gases, or by deleterious gases; 3, homicide by poisoning.

Of Homicide by Contusions and Wounds.

Contusion, is an injury, and sometimes a wound, inflicted by a hard, blunt instrument, without loss of substance, or wound of the skin, but with laceration of the cellular tissue

and extravasation of blood, either diffused or congested, to a cellular extent: if the skin be divided, it is designated a contused wound.

Ecchymosis, or blackness, is an extravasation of blood by rupture of capillary vessels; and hence it follows contusion, but it may exist as in cases of purpura hæmorrhagica, scurvy, and other morbid conditions without the latter; and we often see persons arise from sleep with numerous ecchymoses, which are sugillations, and called by the vulgar, "dead men's pinches."

When ecchymosis is caused by injury, it generally appears in a short time, or in a few hours, but sometimes not for days. The part appears red and bluish, then black or lead colour, violet and yellow, and is marked most in the centre. Its progress and duration will be modified by age and constitution.

It may be produced in deep-seated organs, as in the muscles of the thigh, &c. in the aponeuroses of the hands and feet, on the spinal marrow, whose membranes may be lacerated, without any blackness of the skin, or it may not appear before ten or fifteen days. Again the viscera in the chest, abdomen and pelvis, may be ecchymosed from external injury, though the integuments are discoloured. It is easy to distinguish ecchymosis from lividity, consequent to acute or chronic exanthematous diseases, vesication, inflammation or gangrene, by recollecting the successive changes of colour, and the absence of all symptoms characteristic of these maladies. It sometimes occurs, that intense vomiting causes rupture of minute vessels in the stomach, intestines, diaphragm and lungs; and on dissection, we find black spots of various sizes, which are often mistaken for gangrene. In such cases these spots are soft, and easily detached, while the membranes that enclose the blood in a recent ecchymosis are firm. If we make a free incision through an ecchymosed part, we can readily wash out the effused blood, but ablution will not remove the changes effected by gangrene.

It too often happens that ecchymoses are confounded with cadaverous lividities, which are more or less extensive, of a brown, black, red or violet colour, forming rapidly after death,

particularly on the back, thighs, sides, anterior surface of the body, upon those parts upon which the body has lain while it has been becoming cold. These also appear where pressure is made by the cloths, and from their resemblance to the injuries caused by flagellation with rods, are called by the French *vergetures*. A more appropriate term is, cadaverous lividity or sugillation. These are frequently observed in the most dependent parts of the lungs and abdominal viscera. Professor Andral's remarks upon this subject are deeply interesting, and may be seen in the second volume of his *Pathological Anatomy*, translated by Drs. Townsend and West. These sugillations will be modified by age, constitution, state of the weather, progress to putrefaction, &c. They cannot be confounded with ecchymoses, as there is no effusion or infiltration of blood in the cellular tissue.

The term *commotion* or *concussion*, is the shaking of an organ by a blow or fall, on a more or less remote part, which causes inaction of an organ. Thus a blow or fall on the head, feet, knees, or body, causes concussion of the brain, which may be followed by slight stunning, by hæmorrhage from the ears, nose, or eyes, or by immediate death. Concussion of the spine may or may not affect the brain, and if violent, will be followed by paralysis of all the parts, whose nerves arise below the site of the injury. Hence there may be paralysis of the lower extremities, of the rectum, bladder and generative organs. The organ likely to be affected next to the brain and spinal medulla is the liver, which may be followed by hepatitis, icterus, rupture, hæmorrhage, and death. Every scientific practitioner is aware that a violent blow upon the stomach, will suddenly extinguish life, by injury of the nerves and paralysis of the whole nervous system, and yet no mark of injury can be observed on dissection. I have known a want of knowledge of this fact to be the cause of acquitting a man who killed his victim by a blow of a mason's hammer on the epigastrium. The medical witness was ignorant of the danger of contusion on this part, and the judge reprimanded him very severely for not having opened the body. The practitioner was satisfied the blow was the cause of death, as the sufferer died almost immediately, but he was unable to ac-

count for the result to the court. Sir Astley Cooper mentioned a case in his lectures, where a man received a blow on the stomach from a friend, which caused instant death.

Distortion is a serious injury followed by engorgement, which will not be dissipated for weeks or months, according to the habit and constitution of the sufferer. Sometimes there is stiffness of the joints; sometimes relaxation of the ligaments, which is to be ascribed to a scrofulous or ricketty disposition.

Luxations are generally free from danger, though they may be followed by paralysis and atrophy from the injury of a nerve.

Fractures, if simple, are not dangerous, but if compound or comminuted, especially in or near joints, they are serious and often fatal. I am greatly surprised at the French jurists who give a table to shew the period at which fractures will be consolidated, as every man of science must be convinced of the inaccuracy of any fixed period, for consolidation will be completed sooner or later according to the age, constitution and state of health of the patient.

For example, the same kind of fracture will be united in twenty days in an infant, in thirty or forty in an adult, and in fifty or sixty in an aged person, or perhaps not at all. Every well-informed practitioner must agree with me in opinion, that a gouty, scrofulous, cancerous, or venereal habit, mollities or fragilitas ossium, will modify the period of ossification in fractures, and prove the fallacy of all fixed periods. The valuable remarks of the distinguished and erudite author of the Surgical Dictionary upon these points, amply attest the truth of this position.

Burns, present three degrees of intensity; 1, where there is irritation or slight inflammation of the skin; 2, where there is vesication; 3, where there is disorganization of the skin, cellular membrane or more deeply-seated parts.

In the first and second case there is little danger, unless the injury is extensive, or occupies parts endowed with great sensibility; in general both are cured in a few days. In the third case there is great danger, as the degree of constitutional irritation is considerable and often proves fatal to young and middle aged persons, and to those advanced in life by profuse sup-

puration or gangrene. Even these cases may terminate favourably, but with great deformity.

Gunshot wounds, are generally dangerous, but here also we must be guided in our prognosis by the habit and constitution of the patient. In the works of Hennen, S. Cooper, Guthrie Larrey Thomson, Ballingall and all others—we learn that the bravest men have lost their lives on the field of battle, by prostration of the vital powers, who were only grazed by cannon and musket balls. In other cases, they have lost their lives by hæmorrhage, inflammation or gangrene, or have been disabled by atrophy of the injured limbs, or have recovered while a foreign body has been lodged for months and years in the brain and other parts of the body. Sometimes stiff joints are formed, or interminable fistulæ, which may extend to remote parts. The judicious and scientific surgeon will be cautious in forming a prognosis in these cases.

From the preceding remarks, it must be obvious that an attempt to classify wounds into mortal and non-mortal, is useless, and indeed impossible. I cannot therefore assent to the classification of Marc, Biessy and others, as I believe the constitution and habit of the sufferer will modify all external injuries to an illimitable extent. I am inclined to think that every well-informed surgeon will assent to my position, that wounds and external injuries will be more or less fatal according to the part or organ they occupy, and according to the constitution of the patient.

The majority of medical jurists agree, that penetrating wounds of the great cavities, or in other words, of the brain, heart, lungs, and digestive organs, are generally fatal.

Wounds of the head.—In all these cases we should consider the degree of concussion, the site of the wound and the tissues which are injured. Wounds of the head are inflicted with cutting or blunt instruments. If there is contusion of the occipito-frontal aponeurosis, there is danger of erysipelatous inflammation of the scalp and meninges of the brain, and of course the prognosis is very doubtful. The most unfavourable appearances have terminated favourably, as attested by Sir. A. Cooper, and by myself in my work on Midwifery. If a cutting instrument penetrates obliquely to the cranium, union

may take place (Boyer,) but there is much more probability of erysipelatous inflammation or of exfoliation of the cranium. Many of these penetrating wounds terminate favourably. If the wound penetrates the brain, there may be immediate death, or it may happen in a few days ; and in such cases the danger is exceedingly great.

Incised wounds of the scalp, if judiciously treated, usually terminate favourably. Perpendicular wounds of the scalp may terminate favourably and speedily by proper management, but penetrating oblique wounds are tedious, and often followed by exfoliation. If a wound penetrates the brain, there is danger of hæmorrhage and inflammation ; and these wounds are highly dangerous when a blunt instrument strikes the head perpendicularly ; a soft puffy tumour is produced, which is resolved in five or six days by proper treatment, or concussion may cause death.

When the blow is inflicted obliquely, blood is extravasated in a sort of cavity, caused by the laceration of the cellular tissue, which is more tedious, and sometimes requires to be opened. In cases where the pericranium is detached, exfoliation of the bone generally follows. I have known a case in which the integuments of the forehead were torn by a gunshot wound ; they hung over the face, and were excised by an apothecary's apprentice, who was amazed when I explained to him the error he had committed, and the certainty of exfoliation taking place sooner or later, as the bone was denuded, and the lips of the wound so far distant, that it was impossible to approximate them. A piece of bone, the size of a crown, was thrown off by exfoliation three months afterwards. The countenance of the patient, an interesting young woman, was greatly deformed, and she became subject to epilepsy. The old surgeons considered wounds of the scalp and fractures of the skull highly dangerous for three weeks, and never declared the patient out of danger until after the lapse of that period. The rule is not a bad one, but the period of danger may be later and undefinable.

Fractures of the cranium must be produced by injury, capable of causing concussion of the brain, and hence they are properly considered highly dangerous. A blow upon the

crown of the head will cause fracture at the base of the cranium; a blow upon the superior lateral part will cause fracture on the orbital vault, and a blow upon the occiput may fracture the frontal bone. The danger of fractures and other injuries of the skull are so ably described in all recent works on surgery, that I need not dwell further upon them in this place.

Wounds of the Face.—Contusions and wounds of the eyebrows and lids are generally free from danger, though they may cause blindness. Penetrating wounds of the globe of the eye, of the optic nerve, and causing fracture of the orbital plate, are dangerous, as the brain may become affected. In some habits all or any of these injuries may be followed by erysipelas of the scalp, and consequently be highly dangerous. Contusions of the globe of the eye may induce various disorganizations of the complicated and delicate tissues of that organ, which, though indestructive to life, are generally destructive to vision, and therefore productive of great personal injury. Contusions and fractures of the nose are attended with little danger, and total ablation of the organ is no longer an irremediable deformity, as appears by Mr. Liston's two successful operations for supplying its place from the integuments of the upper lip. (Edinburgh Medical and Surgical Journal, Jan. 1831.)

Fracture of the anterior wall of the *frontal sinus* is not dangerous; but not so of the posterior, from its contiguity to the brain. Slight fracture of the anterior wall of the maxillary sinus is not dangerous; but, if produced by a violent contusion, as a gunshot, fistulous openings are apt to be produced, as also considerable deformity.

Fracture of the *superior maxillary bone* or *zygomatic arch* is not dangerous, unless in syphilitic or scrofulous habits, when caries may occur. Luxations and fractures of the *inferior maxillary bone* are speedily cured, as also wounds of the cheeks and lips. Wounds of the *tongue* are easily remedied by suture; but total ablation of the organ renders mastication, deglutition, taste and pronunciation, defective.

Wounds of the neck are highly dangerous, from the number and importance of the vessels, nerves, and other organs situated in this part. Too many young surgeons are unmindful of

the danger of injuries and wounds of the neck, as they consider these very slightly, when the carotids are undivided. It is to be recollected, however, that a blow of a blunt instrument on the posterior surface of the neck may cause concussion of the spinal cord, fracture of the vertebræ, or dislocation of the odontoid process; while a deep wound on the anterior surface of the neck may divide the phrenic nerve, and in an instant paralyse the diaphragm and muscles of inspiration, or divide the pneumo-gastric or par vagum, and paralyse the stomach, impede respiration and the action of the heart. It seldom happens that the nerves on both sides on the neck are divided, and hence the wonderful escape from immediate death. If the trachea or œsophagus is fairly divided, the wound is considered mortal by medical jurists, as recovery seldom happens in such cases. When the internal jugular vein or carotid artery is divided, death is inevitable in a few minutes, unless ligatures are applied; and it appears, from the testimony of Briand, that in nineteen such cases nine were saved by ligatures. The section of the principal nervous trunks, such as the great sympathetic and tenth pair, are mortal, by depriving organs essential to life, of a proper supply of nervous influence; the division of the recurrent nerve will cause aphonia, and punctured wounds of any of the principal nerves will be followed by inflammation in all parts which they supply, and often by death. Lastly, the cutting instrument may pass between the cervical vertebræ and wound, or completely divide the spinal marrow.

Wounds of the chest.—Contusions and wounds of the chest may be followed by pleuritis, pneumonia, and various disorganizations of the lungs, pericardium and heart, and are therefore considered very serious injuries. Contusions on the female breast may induce cancer: on the ribs, caries or necrosis. When a penetrating cutting instrument divides the mammary or intercostal arteries, there will be effusion of blood into the chest (hæmathorax), which will produce death. Section of the axillary or subclavian arteries will be generally fatal, unless a ligature is speedily applied.

Luxation of the sternal extremity of the clavicle requires

the immobility of the limb for twenty or thirty days, while that of the humoral extremity is followed by deformity.

Fractures of *the ribs* are generally unattended with danger, but by wounding the pleura or lungs, may, of course, induce serious diseases of these parts. Fractures of the sternum, though very rare, may injure the subjacent organs; those of the acromion, and coracoid process and neck of the scapula, are not dangerous, but may produce defective motion of the arm or shoulder joint, or atrophy, or paralysis of the limb.

Fractures of *the vertebrae*, are usually complicated with concussion, or other injury of the spinal marrow, and consequently with paralysis of the inferior extremities, and of some parts of the abdominal viscera; and these affections may occur after the lapse of months, when no trace of the former injury remains.

The *prognosis* of penetrating wounds of the thorax is uncertain, as there will be hæmorrhage into the chest, and likewise the introduction of air, both of which will compress the lung, induce inflammation, suppuration or induration of some part of the organ. In general, wounds of the lungs, pericardium, heart, aorta, pulmonary vessels, venæcavæ, vena azygos, and thoracic duct, are to be considered mortal.

Wounds of the abdomen—Contusions on the abdomen will cause concussion or commotion of the subjacent viscera, or rupture, hæmorrhage or death, though there may be no appearance of injury on the abdominal surface. The muscles may lose their contractility, and hernia be produced. Wounds of the abdominal parietes are highly dangerous, as they almost generally cause peritonitis; and should any of the large vessels, aorta, vena cava, &c. be divided, immediate death must follow. Wounds of the nervous centres (solar plexus), which supply the abdominal viscera, will be followed by a mortal paralysis. Effusion of bile, blood, urine, food or fæces, is fatal, in consequence of inducing peritonitis, which cannot be cured. Hence wounds of the stomach, liver, intestines, spleen, kidneys, uterus, bladder, when distended, and thoracic duct, are generally fatal.

Wounds of the Organs of Generation.—Contusions and fractures of the pelvis are not dangerous, unless the latter are

considerable, or unless some vessel of importance is wounded. Wounds of the spermatic arteries and veins of the male are necessarily fatal, as beyond the power of art; but they rarely exist independently of other lesions equally unfavourable.—Wounds of the scrotum are not dangerous, unless a large quantity of blood be effused into the tunica vaginalis; those of the vesiculæ seminales are not mortal, but are a cause of absolute sterility. Section of the penis is not dangerous, as hæmorrhage can be easily arrested; the wound cicatrises; but there will be incomplete erection on the injured side of the organ. Total ablation of the penis will prove fatal, unless the arteries are secured. Contusions of the testicles may induce scirrhus, which will require castration.

Lesions of the generative organs of women.—Contusions and wounds of the external genitals are not dangerous, unless inflicted during menstruation, when serious consequences may result. It is very evident that the uterus in the unimpregnated condition can scarcely be injured by external violence. In the gravid state, when it ascends above the pubes, it may be seriously injured by blows, falls, &c. inducing fatal inflammation or rupture of the organ, detachment of the placenta, and death of the fœtus. If the organ be punctured, the wound must be considered fatal, if followed by inflammation or gangrene, to both the mother and the fœtus. The organ may be inflamed and gangrenous, complicated with peritonitis and enteritis, in the last month of pregnancy, and without any external violence, or even any evident cause; cases of which are narrated by Dr. Malins, of Liverpool, and myself, in the Lond. Med. and Surg. Jour. 1831, vol. vi. pp. 52, 213. In cases of prolapsus of the organ, its total removal has been effected by ignorant midwives; and the fatal injuries inflicted by ignorant male obstetricians, by manual and instrumental operations in difficult parturitions, are unfortunately too notorious, of late, to require further comment.

Within the last year medical men in this country and in France, have been found guilty of manslaughter, and very justly, for the rashness and violence of their operations were more characteristic of illiterate savages, or of the darkest ages, than of men acquainted with the principles and practice of

obstetrics at the present period. Like all ignorant and bad practitioners, the delivery of the woman seemed their only object, and as to the consequences of contusions and lacerations of her organs and their fatal results, they were totally forgotten.

Lesions of the extremities.—Contusions, dislocations, fractures, and wounds of the superior and inferior extremities are seldom fatal. The loss of a member or part of a member by external violence, accompanied with laceration, may destroy life by intensity of pain, prostration of the vital powers, by inflammation, profuse suppuration, gangrene, or sloughing. The divisions of the large vessels and nerves of the extremities, are mortal wounds, unless timely aid be afforded. Here we must recollect the danger of comminuted fractures, especially in or near joints, wounds of joints, inflammation, suppuration, hectic fever, constitutional irritation, habit of body, &c.

Judiciary Examination of Wounds.

According to the law of this country, the surgeon must describe the length, depth and situation of wounds, also state whether they be mortal or not. He is to examine the *organic state of the wound*, and ascertain whether it be in a healthy or morbid condition. Thus a slight blow may cause rupture of a vomica or an aneurism, strangulation or gangrene in a hernia, or rupture of a varicose vein in the leg. A person who inflicts a wound or contusion in such cases cannot be responsible, as he did not foresee the danger, and the injury he inflicts is independent of his will. We must examine the *state of the constitution* and *habit of body*, as wounds are greatly aggravated, when the patient is of a weak, enfeebled constitution, or is labouring under a chronic disease, or is of scrofulous, venereal or cancerous habit. We must bear in mind the *personal conduct of the patient*, as his refusal to submit to proper treatment, or a necessary operation, his removing bandages, his inattention to regimen, his use of aliment or ardent liquors, interdicted by his condition, may render a wound not necessarily mortal, highly dangerous or fatal. The *conduct* of the attendants must be observed, as their opposition to the proper treatment, their excitement of strong emotions in the sufferer, may cause death. We should also remember the state of the weather,

or insalubrity of situation, as an atmosphere too warm or cold, or that charged with putrid emanations, or that of hospitals, may render a wound mortal. The occasional occurrence of hospital gangrene, and epidemic erysipelas, such as has been lately present in the London Hospitals, and well known to scientific surgeons, may of course render a wound not dangerous, after infliction, ultimately fatal. Lastly, we should consider whether the treatment had been scientific. Here we must be exceedingly cautious in giving an opinion, and always recollect that the greatest diversity of opinion, both as to the nature and treatment of, by far the greatest number of diseases exists, and that the authority of eminent men may be quoted on both sides of the question. On the other hand, when gross ignorance is displayed and fatal injury follows, such conduct richly deserves exposure. This rule was laid down by Dr. Percival, and ought to be followed. It would, however, be an ungracious task to volunteer an opinion on the practice of a respectable contemporary, even for the promotion of the ends of justice. But no honorable practitioner would violate the etiquette and fraternal feeling which have invariably characterised the profession, by exposing or censuring the practice of another from private pique or jealousy, and for no public advantage. Every man who does so, will be despised by the profession, and indeed by the sensible and thinking part of the public. He violates the golden rule of ethics, "do unto others as you would they should do unto you." All medical practitioners, like their fellow mortals in all stations, are fallible; whoever is without this imperfection, may throw the first stone. Every man engaged in practice meets with bad and fatal cases, and may make mistakes, but it would be unjust and unwarrantable in a brother practitioner to expose him to public censure, unless the interests of humanity and science demanded it. As the law now stands, the President of the College of Physicians or College of Surgeons is as liable to be criminally indicted for unsuccessful practice as the veriest empiric in this land of empirics; such was the opinion lately laid down by Judges Park and Garrow, at the Old Bailey, in Long's case; but they went further, and declared no man, regular or irregular, can be subject to a criminal information.

Lord Coke held it felony for an irregular person to undertake a cure and allowed the patient to die. Sir Matthew Hale thinks this an error, and Judge Blackstone sides with the former; Mr. Justice Bayley holds it manslaughter—Willcock on the laws relating to the medical profession, p. 227. Such is the discord among the judges upon this point; but common sense and justice are in favour of the profession and against empirics. From the preceding statements it is evident, that one medical man should be cautious in condemning the practice of another, unless under the circumstances mentioned.

The rules to be followed in making an autopsic examination for juridical purposes have been in a great measure described in the article infanticide. Other points are to be kept in view, as the posture of the body, whether it be naked or covered, if it be in contact with any hard substance, if it be so situated that putrefaction may be retarded or promoted; how it is situated relative to surrounding objects, and particularly with respect to weapons of all descriptions. Every part of the body is to be examined, and all marks of violence carefully noted, when a weapon is found in the hand of the deceased, if this really produced death, or was so placed by a homicide. We should compare its dimensions with those of wounds, and consider the state in which the body has been found, and before removing it, ascertain the site, direction and extent of lesions, and finally, avoid confounding the derangements which may be caused by removal with those produced by former violence. We should also notice whether the instruments have pierced, cut, or contused any part, and if deceased could have made resistance. It is also necessary to note the apparent age, muscularity, condition of the body, whether full or emaciated, the colour and quantity of hair, and in a word, every feature which can prove identity. It is right to observe the dress, all papers, money and other matters found about the person of the deceased.

Having accomplished these things, the body may be removed, washed, and every mark of injury, contusion, ecchymosis, wound, fracture, dislocation, carefully examined, and we must take care not to confound cadaverous lividity with ecchymoses. If the body is that of a female, we must exa-

mine the mammæ, abdomen and reproductive organs, in order to ascertain signs of recent or former delivery.

After all these considerations on the external state of the body, we are next to examine all the outlets, observe all fluids contained in them, and sometimes analyse the latter.

The body may be examined in the manner laid down when describing the examination for infanticide, or as recommended in the recent manuals of practical anatomy. The most minute examination of all internal organs should be made, and all marks of disease carefully noted.

A question has arisen, whether an autopsic examination ought to be made when putrefaction has set in; and it has been decided in the affirmative. Orfila was charged to examine a body, which had been buried twenty-nine days; the external surface was generally in a state of putrefaction, and exhaled an insupportable odour, which required the use of disinfecting agents; but the digestive organs, liver and spleen, pancreas, bladder, heart and lungs, were unaffected by decomposition, and traces of poison were found in the stomach and bowels. A case was lately recorded in one of the French journals, where poison was discovered fourteen years after the interment of the body.

The brown, green or blackish colour of the skin should not prevent the examination of the body, and the fetid odour and all danger arising from effluvia, will be obviated by a free use of the chlorate of lime, in the proportion of six ounces to fifteen pints of water. Orfila strongly advises this solution when exhumation is to be effected, and says some pints of it are to be poured on the earth, when the labourers approach near the coffin, and also when the latter is uncovered before raising it from the grave. The labourers should apply a handkerchief, dipped in vinegar, to the lips and nostrils, as in some cases instant death has been produced by opening a grave.

It is indispensably necessary to open the head, chest and abdomen in all cases; to state all morbid appearances as concisely and as intelligibly as possible, avoiding technicalities whenever we can, and observing generally that all parts were healthy, with the exceptions which may be found. The object of a coroner's inquest in this country is to ascertain

the cause of death, and not to hear a tedious and unintelligible detail of the natural appearances of every tissue in the human body. The questions to be answered, the morbid appearances observed sufficient to account for death, and were they produced by natural disease or by violence? I shall consider all the bearings of this position in my remarks on the manner of giving medical evidence.

When the body is mutilated externally, we should examine all the cavities, especially the intestinal canal, as cases are recorded in which poison was detected under such circumstances.

Can we distinguish wounds inflicted before and after death?

In describing wounds, I have endeavoured to point out the diagnosis between ecchymoses and cadaverous lividity—a point of the greatest importance.

When a wound is inflamed, in a state of suppuration or cicatrization, it must have been produced before death.

If it is inflicted in the last moments of life, its edges are more or less retracted and tumid, it is covered with a clot of blood, there is a sanguineous infiltration in the cellular tissue.

When a wound is made some hours after death, its lips are retracted as if inflicted during life, but its lips are pale, not tumified, without any trace of blood; the cellular tissue is not infiltrated, unless a large vein has been divided.

But when a wound is made immediately after death, it is impossible to draw a distinction; it will possess all the characters of a wound inflicted in the last moments of life. Much stress has been laid on the presence of blood stains upon clothes, and deadly weapons found upon or near the deceased, or in the possession of the accused, but we must be fully convinced of their existence, before we give a positive opinion. Evidence upon this point has too often proved fatal to innocent persons. When such stains are sworn to, the prisoner usually ascribes them to the blood of animals, or to effusion of blood from the nose, an accidental wound or an ulcer; but other facts generally disprove his assertions.

Can we distinguish by dissection whether death is the effect of homicide or suicide? A careful examination of the situa-

tion of a wound, may perhaps enable us to determine this question in the affirmative. If, for example, a fatal, incised, or punctured wound, exists on the back of the head or chest, if the hand or hands of the deceased are also wounded, it is evident resistance had been made, and murder generally proved, though there may be some exceptions. In general a suicide inflicts wounds on the anterior surfaces of the face, chest, and abdomen, and almost always in an oblique direction from right to left: those made by an assassin are from left to right; but though this difference is conclusive with some jurists, I think it far from being positive or satisfactory.

Fodéré is of opinion that the expression of the physiognomy of the suicide is more tranquil than that of the victim of homicide; but this distinction is far too nice to be depended upon.

Before we arrive at a final conclusion, we must consider the age, physical and moral constitution, the season and constitution of the atmosphere, &c. In general, suicide is very rarely committed before puberty, generally from the age of 20 to 50, and rarely after this period. It is said that persons of a sanguine temperament commit suicide in an instant of passion, and the melancholic after long deliberation. It is proved by late writers, that this dreadful act is not so much influenced by climate as was formerly imagined, and that it is as common in Paris as in London. The human frailties and passions are to be found in all nations; and hence we observe, that the hope to serve a country, parent or friend, the respect for religion, for the laws, the belief in a certain religion, political dogmata, philosophical principles, prejudices, usages, pain, moral or physical, chagrin, weariness of life, impotence, delirium of passions, acute diseases and mania, are the motives and causes of suicide in all civilized countries.

Reflection has convinced me that the moral as well as the physical defects of the human family throughout the face of the globe, are not so very dissimilar, as national jealousy had at one time determined.

Dr. Powell, who was secretary to commissioners for licensing lunatic asylums, published an account of the number of lunatics from 1775 to 1809 inclusive, in which he concluded

the malady was on the increase in this country. This conclusion is disputed by Dr. Good, who says, "calculating with Dr. Powell, that the number of lunatic paupers, and those received into public hospitals, which, under the act of parliament, are not cognizable by the commissioners, together with those neglected to be returned, compared with the returns entered into the commissioners' books, bear the proportion of three to two, which is probably far above the mark, still the aggregate number of insane persons for the year 1800, contrasted with the general census for the same year, will only hold a ratio of about 1 to 7300; while if we take, with Dr. Burrows, the proportion of suicides committed in foreign capitals as a test of the extent to which insanity is prevalent in the same towns, which is nevertheless a loose mode of reckoning, though it is not easy to obtain a better, we have reason to conclude, that insanity is comparatively far less frequent among ourselves, than in most parts of the continent: the suicides of Paris, Berlin, and Copenhagen, as drawn from tables collected by Dr. Burrows for this purpose, being, in proportion to the relative population of London, as 5 to 2 for the first, 5 to 3 for the second, and 3 to 1 for the third."

Sir Andrew Halliday maintains, that the number of the insane in England has been tripled during the last twenty years.—*Letter to Lord Robert Seymour*, 1829.

[The prognosis of wounds is involved in great difficulties; in fact there are such a multitude of causes capable of inducing unforeseen consequences in the progress and termination of wounds, that no physician ought to commit himself by giving a decided opinion on the event. The prick of a pin in an unimportant part may cause excessive inflammation and death, whilst the most horrible and apparently, fatal wounds, may terminate favourably. A physician should always bear in mind, the influencing effects of constitution, age, present or antecedent diseases, temperament, disposition, state of the weather, &c. The skill of the medical attendant, and the interval which has elapsed between the time of the patient's having received the wound, and his application for assistance, also have important bearings on the question. Another point of no slight importance may sometimes arise, viz. a person may

receive a wound and apparently die from the effects of it, and yet on dissection it may be evident that the death was induced by another cause, as for instance poison, or even natural disease. Dr. Christison has given two interesting cases of the former of these complications, one of which occurred to Dr. Wildberg, of Rostock. This physician was required to examine the body of a child, who died while her father was in the act of chastising her severely for stealing; and who was believed by the bystanders and her unfortunate parent himself, to have died of the beating. Accordingly Wildberg found the marks of many stripes on the arms, shoulders and back, and under some of the wheals, blood was extravasated in considerable quantity. But these injuries, though severe, did not appear to him sufficient to account for the death. He therefore examined the cavities, and on opening the stomach, found it much inflamed and lined with a white powder, which proved on analysis to be arsenic. It turned out, that on the theft being detected, the girl had taken arsenic for fear of her father's anger, that she vomited during the flogging and died in convulsions. He then imputed the death to poisoning. Another case equally striking occurred to Pyl in 1783. A woman at Berlin, who had lived on bad terms with her husband went to bed in perfect health, but soon afterwards her mother found her breathing very hard, and on inquiring the cause discovered a wound in the left side of the breast. A surgeon being immediately sent for, the hæmorrhage was checked, but nevertheless she died towards morning. On opening the chest it appeared that the instrument had pierced the pericardium, though it did not wound the heart; the fifth intercostal artery had been divided, but there was scarcely any effusion of blood in the chest. Taking all these circumstances into consideration, with the fact that she had much vomiting and some convulsions before death, Pyl concluded she had not perished from the wound, and on further examination found signs of corrosion in the mouth and throat and of irritation in the stomach, and the subsequent discovery of the remains of some nitric acid in a glass in her room, proved she had died of poison. Numerous instances of the latter complication are to be found in the different works of medical jurisprudence.

Notwithstanding this uncertainty, and the impossibility of making an accurate table of the curability or mortality of wounds, the following attempt to give a condensed view of the probable effects of wounds by Dr. Biessy, is so interesting, that we have thought it might be useful to lay it before our readers.

PROGNOSIS OF LESIONS FROM EXTERNAL CAUSES.

NATURE.	SEAT.	MODE OF CURE.	TIME.	OBSERVATIONS.
<i>SOFT PARTS.</i>				
Excoriations.	Skin.	Bloody scabs.	4 to 5 days.	
Inflammations	Mucous membranes.	Resolution.	10 days.	
Eschars.	- -	Disengagement of the eschar, suppuration.	21 to 22 days.	
Contusions.	Skin; mucous membranes.	Resolution.	10 days.	
Echymoses.	Cellular tissue, muscles.	Suppuration.	17 days.	
Wounds.	Skin: mucous membranes.	Union by first intention.	4 to 5 days.	
	Cellular tissue, muscles.	Suppuration.	17 days.	
Wounds with loss of substance.	Skin, mucous membranes, cellular tissue, muscles.	Suppuration.	21 to 22 days.	
Gun shot wounds.	Do. do.	Separation of eschar and suppuration.	Do do.	
<i>HARD PARTS.</i>				
Inflammation.	Periosteum.	Resolution.	17 days.	
	Spongy bones.	Suppuration.	21 to 22 days.	
Necrosis.	Bodies of long bones, compact tissue.	Separation of necrosed part.	- -	Cannot be determined until after separation of necrosed part, which sometimes requires years.
	Compact tissue and head of bones.	Callus.	According to the age and the fracture.	
	Long bones & short bones as the clavicle, &c	Callus.	From birth to 5 years.	
Wounds of bones in general.	Short bones.		12 to 18 days.	
	Long bones of the upper extremities.	Callus.	14 to 20 days.	Generally a local treatment.
	Do. of lower extremities.		25 to 30 days.	
			30 to 35 days.	Confinement to bed.

NATURE.	SEAT.	MODE OF CURE.	TIME.	OBSERVATIONS.
Fractures in general.	Short bones.	Callus.	60 years. 14 to 25 days.	Generally confinement to bed.
	Long bones upper extremities.	Do.		
	Those of lower extremities.	Do.	25 to 60 years. 30 to 40 days.	Confinement to bed.
	Short bones.	Do.	40 to 50 days.	
	Long bones upper extremities.	Do.	60 to 70 years. 14 to 30 days.	Same observations.
	Do. lower extremities.		40 to 60 days.	
Slight Sprain.	Ankle or wrist	Resolution.	50 to 80 days.	
Severe Sprain.	Do. do.	Suppuration.	10 days.	Often followed by lameness. Convalescence depending on nature of bone.
Luxations.	Articulations in general.	Reduction.	17 days.	
Wounds of articulations.	Articulations.	Union by first intention.	Instantaneous.	
		Suppuration—computation.	4 to 5 days.	
Ancylolosis.	Articulations.	Union of articulating surfaces	17 days.	
Wounds of tendons.	Small ; large.	Reunion.	Variable	
			25 to 30 days.	

As is observed by Dr. Beck when a surgeon is called upon to examine a wound, the effects of which may become the subject of a criminal trial, he should ascertain : 1st, whether it has been already dressed, or if some surgeon has not been attending it ; and 2d, whether the situation of the patient will permit an examination. If this latter can be made, every information is to be obtained as to the nature and shape of the instrument by which it was supposed that the injury was inflicted ; as to the relative situation of the parties at the moment of the wound, &c. A physician cannot be too minute in his enquiries on these points. As regards the wound itself, its length, breadth, depth and direction, should be carefully noted, as well as any other appearances that may present themselves.

There is another point connected with the subject of wounds which merits attention, viz. that of mutilation or *mayhem* ; this is defined by Blackstone to be “ violently depriving another of the use of such of his members as may render him the less able in fighting either to defend himself or annoy his adversary. And therefore, the cutting off or

disabling or weakening a man's hand or finger, or striking out his eye or fore tooth, or depriving him of those parts, the loss of which in animals abates their courage, are held to be mayhems. But the cutting off his ear and nose, or the like, are not held to be mayhems at common law, because they do not weaken, but only disfigure him." By a statute 43. George 3d. All wilful or malicious stabbing or cutting with intent to murder, rob, maim, disfigure or disable, or to do some grievous bodily harm, is declared felony.

In *Pennsylvania* the act of 22 April 1794 enacts, whosoever on purpose and of malice aforethought by lying in wait, shall unlawfully cut out, or disable the tongue, put out an eye, slit the nose, cut off the nose, ear or lip, or cut off or disable any limb or member of another, with intention in so doing to maim or disfigure such person; or shall voluntarily, maliciously and of purpose, pull or put out an eye, whilst fighting or otherwise, every such offender, his or her aiders, abettors and counsellors, shall be sentenced to undergo a confinement in the goal and penitentiary house of Philadelphia, for any time not less than two nor more than ten years, and shall also pay a fine not exceeding one thousand dollars, three fourths whereof shall be for the use of the person grieved. On conviction of a second offence, imprisonment for life."

In *Louisiana*, if in consequence of any assault or battery, the person against whom it is committed shall be disfigured, or shall be deprived of or lose the use of any member of his body &c. although there be no design proved of doing such particular injury, the punishment is fine and imprisonment, and if these injuries be premeditated, or there is lying in wait, the fine and imprisonment are increased.

In *New York* the punishment is imprisonment for life.

In *Connecticut*, "every person who shall of malice aforethought, and by lying in wait, cut out or disable the tongue of another, or put out the eye or eyes of another, so that the person is thereby made blind, or cut off all or any part of the privy members of another, shall suffer death." Maiming and disfiguring by putting out an eye, slitting the nose, ear or lips, or cutting, biting off or disabling any limb or member of another person with malice aforethought, is punished by imprisonment for a term at the discretion of the court.

In *Massachusetts, New Hampshire, New Jersey, Rhode Island, and North Carolina* the laws are very similar to those of *Pennsylvania*, and the punishments are by fine, or imprisonment or both.

In *Vermont*, the act only specifies cutting out the tongue, putting out the eyes or cutting off the privy parts, and the punishment awarded is imprisonment for life or a large fine.]

CHAP. XIV.

Observations on Homicide by Asphyxia.

ASPHYXIA is the suspension of respiration by a mechanical obstacle to the passage of the atmospheric air into the lungs, as by submersion or drowning, strangulation, suffocation, by gases unfit for allowing the necessary oxygenation of the blood in the lungs, or hæmatose, as hydrogen, nitrogen, carbonic acid, or deleterious gases, as carbonic oxide gas, sulphuretted hydrogen, nitrous acid gas, sulphurous acid gas, ammoniacal gas, chlorine, &c. Asphyxia may be momentary, and respiration may be restored; but when it is prolonged, it is fatal. Various injuries and diseases may produce it, as division of the spinal marrow, formation of false membrane in the larynx or trachea, and syncope, &c.; but with these causes the medical jurist can have no concern. I shall therefore describe those which claim his attention.

Asphyxia by submersion. The cause of death in all forms of asphyxia, is a want of oxygenation or hæmatose of the blood. This fluid passes through the lungs without any change; it possesses the characters of venous blood and is unfit for sustaining life; the brain suspends its action, the muscles lose their nervous supply and cease to contract, the chest becomes immoveable, the blood accumulates in the lungs, and as the arterial is more contractile and elastic than the venous system, its large trunks become distended, as also the right cavities of the heart, and pulmonary artery, while the left cavities and aorta contain little blood or are empty, and the fluidity of the blood is characteristic, though sometimes white fibrous clots are observed in the heart. In some

cases apoplexy or syncope may occur from fear at the moment of immersion, and death will not be caused by want of respiration, but in general, asphyxia is the cause of death, whether by deprivation of air or by passage of water into the bronchiæ.

In those destroyed by submersion, the face is red and tumid, the pupil dilated, the eyelid partly open, the eyes glassy, the tongue projected beyond the lips, a frothy fluid escapes from the mouth and nostrils, the skin of the trunk and extremities is remarkably pale; the trachea, and sometimes the bronchiæ contain an aqueous sanguinolent froth, according to Louis, Goodwin, Berger, Orfila, and others; and this is formed during life (Piorry), as it cannot be produced by immersion of a dead body; and is only a secondary cause of death, according to Orfila. The chest and epigastrium are swelled, the fingers are deprived of skin, there is earth under the nails varying according to the soil of the bank near the water; the brain is engorged, the epiglottis is straightened, the lungs are dilated and crepitant, containing a certain quantity of froth. All these signs, however, are not conclusive. Thus a pale colour of the skin might occur, if a person, destroyed by severe hæmorrhage or inanition, was precipitated into the water. The colour and tumidity of the face will not be present, should the submersion be effected rapidly and have caused syncopal asphyxia, or anger or drunkenness might induce it. The external appearances of the body will vary according to the length of time it has been in the water; so that the indications afforded by them are illusory. The frothy matter may be seen in apoplexy, convulsions, epilepsy, in certain cases of poisoning, and after strangulation or putrefaction. The states of the eye and eyelids are equivocal. The distention of the right side of the heart will be present, in all cases where the circulation of the blood is suddenly suspended. The fluidity of blood is observed in scurvy, in those destroyed by electricity, and in many species of cachexiæ. The engorgement of the brain is still more uncertain, and may arise from a variety of causes. The condition of the lungs and elevation of the thorax arise from various causes. The presence of water, or of any other fluid in the

stomach, is a strong proof; as such fluid does not enter that organ, unless the body is in an erect position when immersed.

Considering all the signs, we can seldom decide indubitably, that the person perished by submersion. It is also impossible to decide, whether the person has fallen into the water by accident, or has thrown himself in, or is the victim of homicide. Here we must recollect, that persons intent on suicide, have wounded themselves without causing death and then thrown themselves into the water. We should inquire whether the deceased was short-sighted, affected with vertigo or insanity, and examine the state of the bank, marks of footsteps and various other circumstances. When there are ecchymoses on the neck or wrists, or traces of poisoning, we may suspect assassination, and in the former we must be careful in distinguishing ecchymoses from cadaverous lividity, in the manner already described in treating of wounds. We can generally distinguish wounds inflicted before and after death; though a person may fall against a stone and receive a wound in the water which can scarcely be distinguished from one inflicted before immersion. When new-born infants are drowned, we must discover whether they were born alive or not, by the proof stated in the article on infanticide.

Asphyxia by strangulation, suspension, or hanging, is effected by mechanical pressure on the neck by a cord, cravat or any other means, which prevents the passage of the air to the lungs, and thus causes asphyxia. In suspension or hanging, there is strangulation, and often dislocation of the upper cervical vertebræ, causing pressure on the spinal marrow, paralysis of the respiratory nerve, paralysis of the thorax, and instant death. Laceration of the vertebral ligaments, dislocation or fracture of the vertebræ, is caused by the modern mode of hanging, as the body is precipitated, and its weight produces these effects. Are these certain signs of death by strangulation? Can we distinguish when suspension is made before or after death, or whether strangulation be voluntary or criminal?

The signs laid down by writers that strangulation has caused death are the following: the skin of the neck on which the cord has been applied is of a yellowish black colour, is dry

and resembles parchment. These effects however are found when strangulation has been produced before or soon after death; the existence of ecchymoses is very rare (Esquirol. *Arch. de Med.* 1823), in general where there is no effusion of blood in the subcutaneous cellular tissue. When real ecchymoses are observed, the strangulation was produced during life. On the other hand, strangulation may be caused, and this sign be absent, or it may be deep-seated in the muscles. Its absence on the skin is no proof that death has not been caused by this means. There is an apoplectic condition of the brain indicated by tumefaction and great redness of the face and lips, by the swelling of the eyelids, and lividity or blue colour, by the redness and prominence of the eyes, which appear as if starting from the sockets; there is a livid engorgement of the tongue which is thickened and projected between the teeth; there is a sanguinolent froth in the throat, mouth and nostrils; the lungs and heart are gorged with black blood; the extremities are violet, the fingers contracted, there is erection of the penis and seminal emission, or the latter without the former. The lividity of the face and congestion of the brain may exist, but disappear before the autopsy, or may be produced some hours after death, but not after twenty hours, (Esquirol): a vertical position will cause them to disappear or a declivity of the head of a dead body will produce them. The signs afforded by the eyes, eyelids and tongue are of little value. The presence of froth in the air passages, and the engorgement of the lungs and heart are seen in all species of asphyxia, and are of course inconclusive. The erection and seminal emission may not happen. The luxation and fracture of the vertebræ may happen before or after death, and unless accompanied by ecchymosis, superficial or deep-seated, are equivocal: there may be effusion of blood into the vertebral column.

Upon the whole, when strangulation or suspension causes death, there may be ecchymosis without any sign of putrefaction, and the certainty is complete, if there is lividity of the face, froth in the air passages, and the clothes stained by a recent seminal evacuation. But should all these signs be absent, there are no just grounds for denying that strangula-

tion has happened. To decide that strangulation has happened after death, we must find wounds, fractures, contusions of the cranium, or other important organs or traces of poison in the intestinal canal: where none of these signs are present, we must conclude that strangulation was caused during life. Devaux met a case in which there was no sign of strangulation, except discoloration of the face, which fact led him to examine the body closely, when he discovered a small penetrating wound of the heart, which might have been overlooked, upon a superficial examination. It is difficult to decide between suicide and homicide. A person may wound himself, if he swings himself among surrounding bodies. When blood is observed upon the individual, we may in general decide it a case of suicide: but homicide may occur under such circumstances. In real strangulation, we have grounds for supposing it homicide, for an individual who intends to destroy himself in this way, generally wants the power to effect his wicked purpose. Such persons may however tighten the ligature by some instrument, as a piece of iron or wood. It is equally difficult to distinguish suicide from homicide in the case of suspension. Fracture or dislocation of the cervical vertebræ may occur in voluntary as well as criminal suspension. Orfila, Chaussier, Pfeffer, Ansiaux. Orfila, however, concludes, that in general, such lesions of the vertebral column, are not the result of suicide. In all these cases we should consider, the habitude, morality, and intellectual state of the individual; but it is foreign to my purpose to introduce in this place all the causes of suicide.

Asphyxia by Suffocation.—Suffocation is different from strangulation, it being produced by the introduction of some foreign body into the throat, larynx or pharynx, which prevents respiration. Infants, and adults when intoxicated, are often smothered, the former by what is called overlaying, as when the bolster or bed clothes press on the mouth, and obstruct respiration. New born infants are often destroyed in this manner, as already described in the article on infanticide. Various foreign bodies, as cotton, tow, earth, sand, wood, &c. will be found in the pharynx, and may be introduced after death. When these bodies are hard, they will produce ecchymoses,

excoriations and lacerations. In all these cases death is caused by the prevention of the circulation through the lungs, and these organs will be found gorged with blood, or contain some frothy mucosity, the brain will be congested; but these morbid conditions may be produced in the different species of asphyxia, and consequently afford no conclusive evidence. We must attend to the circumstantial evidence, which is the principal or only means to assist us in forming an opinion.

Asphyxia from non-respirable gases.—Two divisions of gases are described, the one non-respirable, and producing the same phenomena as a want of air. These are nitrogen, hydrogen, protoxide of nitrogen, carbonic acid, oxide of carbon, and carburetted hydrogen. The second includes sulphuretted hydrogen, sulphurous acid gas, nitrous acid gas, ammonical gas, hydrochloric acid gas and chlorine.

Many of these also are only to be encountered in the chemical laboratory. Professor Christison divides gases into irritants and narcotics. The irritant gases are nitric oxide gas and nitrous vapour, muriatic acid gas, chlorine, ammonia, sulphurous acid, and others of little consequence; the narcotic are sulphuretted hydrogen, carburetted hydrogen, carbonic acid, carbonic oxide, nitrous oxide and cyanogen.

Nitrogen gas.—This gas is found in cellars, in which substances are placed, which have a strong affinity for oxygen, as oils, &c. and sometimes in privies. The signs of asphyxia from this cause, are pallidity or a greenish cast of skin, extreme anxiety, large and frequent respiration, and death occurs in a few minutes without any lesions of the nervous system. The arterial system is full of black blood. The effects of *hydrogen gas* are nearly similar, and can only be produced by chemical experiments.

Asphyxia by carbonic acid gas occurs from the combustion of charcoal, common fuel, or in cellars, from fermentation of wine or malt, from lime kilns, from coal pits, and draw wells. Brewers men are often destroyed by this gas, when they descend into large vats for the purpose of cleaning them, unless they use proper precaution. It is usual to lower a candle into the vat, which will be extinguished as soon as it encounters the acid, which, from its greater gravity than atmospheric air, falls to the bottom of the vessel. I have been call-

ed to two persons who were destroyed by inattention to this precaution. The effects of the non-respirable gases are similar to those arising from want of renewal of air. This was well exemplified during our East Indian wars, in the horrible incarceration of our countrymen, by their savage opponents at Calcutta. One hundred and forty-six persons were confined in a chamber of twenty-four feet square, having only two small windows. The first effect on these unfortunate persons was abundant and continued perspiration, insupportable thirst, succeeded by great pain in the chest, and a difficulty of respiration amounting to suffocation. They were attacked with fever, which increased every moment, and after four hours, most of them were dead. Many became stupid, lethargic and delirious, and only twenty-three escaped alive. In those destroyed by want of air, the right cavities of the heart, and the venous system are filled with very black blood.

The symptoms produced by *carbonic acid*, or *fumes of charcoal*, are heaviness of the head, intense headache, which impels the sufferer to compress the temples, cerebral congestion increases and causes vertigo, drowsiness or profound sleep, tingling of the ears, impeded respiration and circulation; the muscular power ceases, profound coma ensues, and death seems apparent. During the development of these symptoms, some persons experience a general feeling of pleasure, and the excretions are discharged involuntary. In these cases, the body remains warm for a long time; the extremities flexible, the muscles are softened, the colour of the surface is congested, pale, leaden or violet, the face is red or flushed, the lips of a vermilion hue, the eyes are bright, the tongue is swelled, the epiglottis is raised, the veins of the brain and lungs are congested with very black blood, the stomach and intestines are red, the mucous surfaces are ecchymosed, the blood remains fluid, and all the lesions characteristic of asphyxia, are apparent. It is not as yet determined whether this gas is deleterious or acts negatively, by causing asphyxia; Dr. Christison thinks it positively poisonous: but it has been injected into the veins and produced slight effects, such as feeble muscular action, which disappeared spontaneously in a few days. (Nysten.)

Asphyxia, by deleterious gases. Sulphuretted hydrogen, is known by its odour, which resembles that of rotten eggs, and causes a black precipitate in solutions of lead, copper, bismuth, silver, &c. A small quantity of it causes death, and even when mixed with atmospheric air, it often induces serious accidents. It is disengaged during the putrefaction of animal and vegetable substances. Its effects are, great prostration of muscular power, oppression of the chest, with difficulty of respiration, headache, nausea, and marks of oppression of the nervous system, and probably a change in the blood.

After the death, the mucous membranes of the nose and bronchiæ are lined with a thick bluish mucosity, the blood vessels are filled with a blood of a similar colour; a colour which is observed in the brain, lungs, kidneys, and all organs abounding in sanguineous vessels. The muscles have lost their contractility, all the soft parts are easily lacerable, exhale a fetid odour, and speedily becoming putrified.

Asphyxia, produced by gas evolved in privies and drains. This mephitic vapour owes its deleterious properties sometimes to hydrosulphate of ammonia mixed with atmospheric air, and sometimes to nitrogen; by the French it is denominated *plomb*, and arises from privies.

The symptoms produced by this poison, are headache, nausea, paleness of face, dilatation of the pupil, a frothy sanguinolent fluid in the mouth, constriction of the throat, sardonic laugh, violent cries, convulsions of the muscles of the chest and jaws, sometimes tetanic spasms, articular pains, coldness of the skin, and irregular and embarrassed respiration. At other times, there is stupor, the visage is violet, the eyes are dull, the pulse is small and frequent, the breathing convulsive, the extremities are relaxed. At the approach of death, all the symptoms are aggravated, the sufferer roars loudly, the body is bent backwards, as in *opisthotonos*. The morbid appearances are similar to those caused by sulphuretted hydrogen or hydrosulphuric acid gas. This was said to be the cause of the fatal cholera at Clapham, which is denied by Christison.

Asphyxia, by sulphurous acid gas, nitrous, hydrochloric, ammoniacal, and arsenical gases, hydrogen, carburetted hydrogen, and chlorine.—All these gases are irritant, inducing cough,

suffocation, vivid pains in the chest, sometimes hæmoptysis and always mucosities in the bronchiæ. When death approaches, there is hiccup, rale, great pain in the diaphragm, convulsive motions, delirium and inexpressible agony. The cause of death is irritation of the mucous membrane of the bronchi. The nitrous oxide, or laughing gas, protoxide of azote, destroys life in this manner.

There are many other gases which are destructive to life, which I have not described; but these cannot become the subject of forensic investigation, as they produce their effects upon experimentalists, who may avoid them. A full account of them will be found in Dr. Christison's elaborate Treatise on Toxicology, a work which ought to be in the hands of every medical practitioner. Vegetable emanations may produce syncope or asphyxia, either by the extrication of carbonic acid, or by their mere odour; this can only be accounted for in the latter case by peculiarity of constitution or idiosyncrasy. The descriptions of these cases cannot be of interest to the medical jurist.

Homicide by Combustion.—The medical jurist is seldom called on to pronounce an opinion on a body destroyed by combustion, as murder is seldom perpetrated by burning. The records of legal medicine afford but few illustrations of homicide by combustion. When such cases occur, medical evidence may be required, as stated in the remarks upon burns or torrefaction. It is now admitted on the continent of Europe, though disbelieved in this country, that spontaneous combustion is possible, though its cause is as yet inexplicable. It is said to occur most commonly to aged females, who have long indulged in the abuse of alcoholic potations. Generally speaking, some matter of ignition, as a lighted candle, a pipe, &c. has been found near the remains of the body; but cases are attested in which no igneous substances were discovered. Lecat, Kopp and Marc refer to the fact of spontaneous combustions having taken place in the bowels of the earth, and as friction on the extremities of certain persons, elicit electric sparks, why should not these excite inflammation or ignition of the alcoholic fluid, or of a gas contained in the cellular substance of our organs? In spontaneous combustion, the flame is like

that of certain meteors, and is extinguished with difficulty. The walls in the chamber in which this happens are covered with an unctuous fetid humidity, such as results from the combustion of hydrogen gas. It rarely happens but that some of the bones of the limbs remain, but the trunk is first consumed, probably, from the size of its cavities, and on account of the laxity of the cellular tissue, and the evolution of hydrogen gas in the intestines. When the individual does not perish at the instant of the accident, sphacelus is developed and soon causes death. If life remains for four or five days, an insupportable odour is exhaled, the nails are detached, and worms are generated. These characters cannot be confounded with accidental combustion, or burns; in these, the redness of the blisters and the eschars leave no doubt on the nature of the appearances, and accidental combustion seldom destroys the whole body without extending to surrounding objects; all jurists admit the possibility of spontaneous combustion. The reader will find references in the works of Beck, G. Smith, Briand, Sedillot, and others.

Death by Inanition or Hunger.—It seldom happens that homicide is committed in this manner, though it is well known that cruel and unnatural parents, step-fathers and step-mothers, occasionally destroy children and young persons by famine or starvation. The ancient and modern history of Ireland affords ample evidence of the destruction of life by this cause. Besides, persons may be found dead, when it will be important to inquire whether life has been extinguished by cold, hunger, poison, &c. It is, therefore, important to state what are the signs of death by starvation. The body is emaciated, the eyes are red and open, the tongue, throat and buccal mucous membrane are very dry, the stomach and intestines are contracted and empty, there is no feculent matter in the bowels, the gall bladder is full, and bile tinges the stomach and bowels, and all the blood-vessels are empty. Many of these signs are different from those which characterise other causes of violent death.

CHAP. XV.

Preparations of Mercury, Arsenic, Copper, Silver, Bismuth, Gold, Antimony, Lead, Glass, and Enamel.

Homicide by Poisoning.—The name of poison is given to all substances, which, when applied to the organs of the body, cause death. In order to give judgment in cases of poisoning, the medical jurist should be acquainted with the different poisons, their physical and chemical characters, their effects on the animal economy, the means of distinguishing them from all matters with which they may be confounded or obscured, or in their combinations with the various tissues. These studies are indispensable to medical men, so that they may act with honour and conscience in accomplishing the exigencies of science and justice. We shall, therefore, consider the various bearings of this subject as concisely as possible, but yet as comprehensively, as the present state of science permits.

Mode of Action of Poison on the Economy.—Every poison possesses peculiar effects upon the body, and is characterised by peculiarities which indicate the species to which it belongs. It may be employed in various ways, by being introduced into the stomach, or into the bowels by the anus, or it may be applied to the mucous surfaces of the various outlets, to the serous and cellular tissues, to the lungs by respiration, as in cases of asphyxia, or it may be inserted under the skin by inoculation, or injected into the veins. It is scarcely necessary to mention, that all poisons do not act in the same doses, or through the same tissues. It was long held by physiologists that poisons were absorbed by the veins or lymphatics; but there is every reason to conclude, that all act in the first instance on the nerves, as is incontrovertibly proved by Morgan and Addison.—(*Essay on the Action of Poisons*, &c. 1829.) These experimenters admit with Fodéré, Tiedemann, Gmelin, Magendie, Brodie, Wilson Philip, Barry, Laissaigne, and others, that absorption takes place, but that death may be produced by the same poisons solely through the nerves; and that this occurred when they divided all the tissues in a limb, except the nerves. The presence of poisons in the fluids of the body as

repeatedly observed in the blood, urine &c. does not invalidate the opinion, that their fatal results took place through the medium of the nerves of the vessels which contained them.

General Indications of the means of detecting poisonous substances.—There is no subject which requires such minute precautions as the discovery or detection of poisons, from their varied combinations with the fluids and solids of the body. Hence the processes for detecting them are exceedingly numerous. This will appear from a reference to the works of Orfila, Christison, and of other toxicologists. To the first illustrious professor we are indebted for a classification of poisons which is now generally received, and is as follows :—

1, Irritants; 2, narcotics; 3, narcotico acrids; and 4, septic or putrefiants. This arrangement is adopted by Christison, and differs from those proposed by Paris and Beck, and is decidedly the best.

CLASS I. Irritant Poisons.—The poisons comprised in this class belong to the three kingdoms of nature. The symptoms produced by irritant poisons, when taken into the stomach, are violent irritation and inflammation in one or more divisions of the alimentary canal.

There is a sense of heat and burning in the tongue, mouth, throat, gullet and stomach, the pain is acute and extends to the abdomen; it is increased by drinks and the respiratory movements, the heat is acrid and corrosive, the breath is fœtid, nausea is often an early symptom, there is vomiting of a tough mucus or of a brown, blackish, sanguinolent matter, or clots of pure blood, which cause a sense of bitterness and acidity in the mouth; the smallest quantity of drink is rejected; sometimes the bowels are constipated, but generally there are copious, fetid and bloody alvine dejections; there is hiccup; the skin is pale, cold, and bedewed with a cold, clammy perspiration; the extremities become cold, painful eruptions appear; the face is pale, or leaden coloured, affected with convulsive contractions; great prostration occurs; the pulse is small, irregular and weak; the agony and anxiety are extreme; there is a desire to pass urine, which cannot be gratified; sometimes the intellectual faculties are unimpaired, and the sufferer is conscious of his horrible pains and approaching fate; or the

nervous system is stupified, and death occurs without much agony. In some cases the stomach is affected without the mischief extending to the intestinal canal, but generally both are implicated; in bad cases, the whole tube from the mouth to the anus is affected at the same time. In some instances there is irritation in the windpipe and lungs, and urinary organs.

When poisons are applied externally they cause redness, or blistering, or sloughing, by corroding the tissues chemically, and some of them induce inflammation of the cellular membrane which may be diffused between the muscles. Others are absorbed, especially if applied to a wound or ulcer, causing lesions of the nervous system, the lungs, heart and digestive tube. Hydrophobia, syphilis, smallpox, and poisoning by narcotics, are examples of the last mode of action.

Lesions of Tissue. Autopsy.—There will be inflammation of the mucous membrane, of the cheeks, throat, gullet, stomach and intestinal tube; sometimes there will be only congestion, but generally there will be black spots on the stomach, caused by effusion of blood between its membranes; at other times there will be *ramollisement* or softening of its mucous, or muscular, or serous tunic, or complete perforation of the three coats. In some cases the small intestines are untouched, while the stomach and large intestines, especially the rectum, are highly inflamed. These phenomena are explained by the rapidity with which the poison passes through this part of the digestive tube, while it is delayed longer in the stomach and rectum. It is to be remembered that the effects of many natural diseases are easily mistaken for those of poisons; these are distention and rupture of the stomach, inflammations of the stomach, and bowels, spontaneous rupture of the stomach and duodenum, bilious vomiting and cholera, effects of drinking cold water, hernia or rupture, melæna, hæmatamesis, colic, iliac passion, and inflammation of the peritonæum. The diagnosis in these cases is sometimes extremely difficult, and is often exceedingly doubtful. Distention and rupture of the stomach may be caused by gluttony, and produce sudden death from congestive apoplexy, or from an impression on the stomach itself. The

appearances on dissection will, according to Christison, enable us to form a correct conclusion in such cases, and in simple rupture of the organ.

Drinking cold water, when the body is over heated, has caused sudden death from the compression on the nerves of the stomach (Duncan,) or from inflammation of the organ, followed by gangrene (Haller.) Ices or iced water in hot summers, produce similar effects. (Bull. des se Med. v. 6.)

The symptoms of cholera are exceedingly like those produced by the poisons under notice. In some cases it is impossible to distinguish them. Dr. Christison offers the following diagnosis in cholera:—the sense of acridity in the throat never precedes the vomiting; there is no sanguinolent vomiting, and in this country “death within three days is very rare indeed.” Death from irritant poisons is seldom delayed beyond two days and a half. D. Mackintosh and Mr. Tatham have known cholera fatal in a less period than that above mentioned; the latter in twelve hours. Edinb. Med. and Surg. Journ. v. xxviii. Dr. Christison concludes that cholera in this country very rarely proves fatal, as early as irritant poisoning (work 1829), that is within two days and a half; while D. Mackintosh states (in his Practice of Physic, 1828,) that several fatal cases within this period have been reported to him. Idiopathic gastritis may perhaps exist, but inflammation of the stomach is usually caused by poisons, and the burning in the throat, if present at all, does not precede the vomiting. The symptoms and morbid appearances in enteritis and peritonitis are widely different from those induced by poisons. Spontaneous perforation of the stomach has been often confounded with effects of poisoning; but it occurs after scirrhus, simple ulceration, and softening, or ramollissement, or gelatinization. (Christison.) The last form is ascribed by John Hunter and most British pathologists to the gastric fluid after death; but Christison, as well as Andral (pathology) questions this conclusion. Mr. Allan Burns however found a perforation in the stomach of a girl who died of diseased mesenteric glands; he sewed up the body, and after two days he discovered another opening. Edin. Med. and Sur. v. vi. It appears from the testimony of

Christison, that perforation of the alimentary canal by worms, colic, melæna, ileus and obstructed hernia, can scarcely be confounded with effects of poisoning.

Irritant Mineral poisons.—The poisons of this class are sulphuric acid (*vitriolic acid, vitriol, and oil of vitriol.*) Nitric acid (*aqua fortis*) hydrochloric acid (muriatic acid, or spirit of salt,) phosphorus, iodine, liquid chlorine, potassa with lime, oxalic acid, nitrate of potassa, soda, lime, barytes, and liquid ammonia.

Mineral Poisons.—It has happened of late years that infants have been destroyed by the barbarous practice of pouring sulphuric acid into the mouth; and the countenance has been disfigured, vision destroyed, by throwing this acid upon the face. The latter crime is a felony.

When mineral acids (especially the nitric acid) are applied to the skin, they produce irritation, inflammation, and corrosion. They act by the transmission of their local impression along the nerves. The inside of the mouth is generally shrivelled, white, yellow, if from nitric acid; brownish from sulphuric, and often more or less corroded; there is intense burning pain in the throat, œsophagus, and stomach, which is followed by eructations of gases evolved by the chemical decomposition of the coats of the stomach, and the pain is much more intense than in ordinary gastritis.

The matter vomited is brownish, black, or mixed with shreds of membrane, or consists of coagulated mucus; the patient is affected with tenesmus and urgent desire to evacuate his bladder; the breathing is laborious, as the movements of the chest increase the pain in the stomach. The pulse is generally weak, but may be natural; and sometimes there is no uneasiness or torture produced even after a large quantity of the poison. In some cases there is an eruption all over the body. The fatal effect from poisoning by acids occurs between half a day and two or three days, it has happened in two hours, and has been prolonged to fifteen days. The patient may linger for eight months; there may be imperfect or perfect recovery. Christison thinks that death may occur from inflammation and spasm of the glottis and larynx without the poison reaching the stomach or the gullet. In these

cases the clothes show red or yellow spots, when nitric or sulphuric acid has been taken.

Autopsy.—The lips, fingers, and other parts of the skin will be spotted or streaked from disorganization of the cuticle by the acid; these marks are brownish or yellowish brown, and present, after death, the appearance of old parchment, or of a burn, or of vesication. The mucous membrane of the mouth is generally hardened, whitish or yellowish; the pharynx is in the same state or very red, the gullet is often lined with a dense yellow membrane, the subjacent tissue is brown or red. The muscular coat of the mouth, throat, and epiglottis is sometimes exposed, and occasionally the gullet is unaffected, though the mouth and stomach are severely injured; the peritonæum is generally inflamed, but not always. The stomach, if not ruptured, is commonly distended with gases, and contains a quantity of yellowish brown or black matter, and is lined with a thick paste of disorganized tissue, blood and mucous. The pylorus is contracted, the mucous membrane is not always corroded. When the acid is diluted, the coats of the stomach may escape corrosion; but there will be excessive injection, gorging and blackness of the mucous membrane with or without softening. Again, there may be perforation of the stomach; the duodenum is affected with the other appearances of the stomach. In the second or chronic variety the stomach and intestines are greatly contracted, the latter to the size of a quill. The pylorus is so contracted as barely to admit a probe. There are red spots on the surface of the stomach, and its coats may be attenuated, especially where adherent to surrounding organs, on separating which perforations become apparent. When sulphuric or nitric acid is injected into the anus after death, there is no sign of inflammatory redness, the mucous membrane is yellowish and brittle, the muscular and peritoneal coats are white, as if blanched.—(Orfila.) When all the appearances already described exist, Dr. Christison is of opinion that we may conclude without chemical evidence, that poisoning has been caused by mineral acids.

Treatment of Poisoning by the Mineral Acids.—The immediate exhibition of chalk or magnesia, or if these cannot be had, of any mild fluid, milk or oleagenous matters, and then a free use

of diluents to facilitate vomiting should be employed. Should inflammation commence, it is to be treated as ordinary gastritis.

Tests for Mineral Acids.—Under this head we shall merely describe the tests which interest the jurist, taking it for granted he is informed on the physical and chemical properties of the acids in a pure and diluted state. Thus the jurist has to determine whether sulphuric acid exists in the vomited matter and when it is supposed to cause stains on the clothes.

Sulphuric Acid.—The process is simple, for the detection of the acid in alimentary matter. The suspected matter is to be boiled for a few minutes, and after filtration, sub-carbonate of lime added; the mixture agitated when sulphate of lime is obtained, which is to be dissolved in boiling water, and tested by a salt of baryta, the product is to be calcined with charcoal, and this gives a sulphur, from which sulphuretted hydrogen will be evolved by a few drops of nitric or hydrochloric acid. (Sedillot, 1830.) Dr. Christison describes this process more minutely when diluted.

When diluted, it is to be tested with litmus and tasted. An acid having thus been proved to be present, a little nitric acid is to be added, and subsequently a solution of the nitrate of baryta. If a heavy white precipitate falls down, it can be nothing else than sulphate of baryta, because no acid but the sulphuric, forms with the barytic salts a white precipitate insoluble in nitric acid. The phosphate and carbonate of baryta are both soluble in nitric acid. In applying this test care must be taken to employ nitric acid entirely free of sulphuric—an admixture which the common nitric acid of the shops almost always contains.

The test now mentioned is alone sufficient to indicate the presence of sulphuric acid, combined or uncombined. But as the duty of the medical jurist is to supply not only satisfactory evidence, but also the best evidence which his science affords, it is advisable in a criminal case to establish the nature of the precipitate still farther by the following process:—

“Collect the precipitate on a filter, wash, dry, and remove it. Then mix a little of it (not more than two grains) with a small proportion of dry charcoal powder; and subject the

mixture for two or three minutes, in a covered platinum spoon or in a fold of platinum foil, to the flame of a spirit-lamp enlivened with the blow-pipe. A portion at least of the sulphate is thus converted into sulphuret of baryta. To prove this, put the powder with a little water in the bottom of a small glass tube, add a little hydrochloric acid, and then hold within the tube, without touching the matter below, a bit of white paper moistened with acetate or nitrate of lead. Sulphuretted hydrogen gas is disengaged, which will darken the paper, and likewise often betray itself by its singular odour.”—(Christison.)

This process is to be applied for the detection of stains, the cloth or other solids being boiled, &c.

Nitric Acid.—The process proposed by Christison for the detection of nitric acid when mixed with food, consists of neutralizing the acid with potass, evaporating to dryness, and ascertaining by the addition of sulphuric acid and the application of heat, whether nitrous fumes are evolved. Sedillot, who is one of the latest and best French writers, recommends a different plan, namely, to saturate the suspected mixture of animal substance and acid, with saturated carbonate of potass, to filter and evaporate the fluid, and crystals of nitrate of potass will be obtained. Dr. O’Shaughnesy, an able analyst and jurist, objects to these tests, and after a satisfactory exposure of their fallacy, proposes an entirely new re-agent, namely, morphine, which, when brought into contact with nitric acid, in the minutest quantity, immediately produces a brilliant vermilion colour. The mode of experimenting requires attention. “A capillary tube should be used to absorb the minutest drop of the suspected liquid, which should then be gently expelled on a particle of morphine, placed on a white porcelain surface, when the characteristic tint is instantly produced.” (Practical Commentaries on Dr. Christison’s Processes for Detecting Poisons.—Lancet, 1831, vol. 1.)

Muriatic or Hydrochloric Acid, seldom comes under the cognizance of the medical jurist as a poison. No chemical evidence can be valuable when applied to the contents of the stomach; since free acid and muriates have been detected in the secretions of that organ, by Prout, Tiedemann, Gmelin and Greaves.

This acid is known by its peculiar vapour, and by the white fumes formed by its mixture with ammoniacal gas, on the approach of the open mouths of two bottles containing these substances. The precipitate caused by nitrate of silver is to be filtered, dried and heated in a tube. "It fuses at the point of redness, is not decomposed at a red heat, and on cooling forms a translucent mass, which cuts like horn." (Christison.)

Dr. O'Shaughnesy objects to the test of ammoniacal gas, as he says it will produce a similar result, though of a less degree, by exposing strong nitric, sulphuric or acetic acids to it. He says a portion of the acid should be diluted, and to one part nitrate of silver, and to another, nitrate of baryta is to be added: if a precipitate occurs in the former and not in the latter, the evidence of muriatic acid cannot be disputed. The former writer says that a similar precipitate is caused by the same test with many other acids and their salts. Work on Poisons, p. 121.

Phosphoric Acid.—The plan for detecting this, is by evaporating the suspected solution to dryness, saturating with ammonia and precipitating it by hydrochlorate of lime; in treating the phosphate of lime with a little charcoal in a glass tube, phosphorus will be obtained. Poisoning by phosphoric acid is exceedingly rare, and is the only case recorded by Christison, in which there was no aphrodisiac effect produced.

Liquid Chlorine.—This substance is detected by its green yellow colour, and a peculiar odour, which can scarcely be mistaken; it discolours all vegetable substances, evolves gaseous chlorine by elevation of temperature, and with nitrate of silver a white curdy precipitate, insoluble in nitric acid and soluble in ammonia, is produced.

Iodine, when urged too far, is a violent poison, as it may accumulate in the system like digitalis and operate suddenly. The symptoms which follow its inordinate use, are loss of appetite, pain in the stomach, vomiting, purging, rapid and extreme emaciation, absorption of the breasts and testicles, small frequent pulse, great constitutional disturbance and violent spasms. Orfila found small yellow patches and ulcers on the mucous membrane of the stomach of a dog. In one case

there was intense peritonitis, adhesions of the intestines, enlargement and pale rose red colouration of the liver. There was effusion into the peritoneal cavity and chest. (Christison.) Dr. O'S. comments upon this account, and says, "We believe that wherever death occurs later than sixty hours after poisoning by iodine, it will be sought in vain in the alimentary canal, while it may have been readily detected during life in the urine.

"Iodine, when taken into the alimentary canal, remains there but a very short time in a free condition. If the poisoned animal have recently eaten bread, potatoes, or other amylaceous matters, the iodine is almost immediately converted into the iodide of starch, and this again is, by some inexplicable digestive process, transformed into the hydriodic acid.—So rapidly do these changes take place, that in one instance in which we administered a drachm of solid iodine to a dog, though vomiting took place in fifteen minutes, yet not a trace of free iodine could be detected by starch in the rejected matters, though hydriodic acid was found in large quantities.

"Again, the hydriodic acid once formed, is rapidly eliminated through the several excretory channels. In forty minutes we have found it in the urine, in which, in the dog just alluded to, it was detected occasionally for five days; viz., on the first and second, and on the fourth and fifth, when he died. Strange to say, though the same process was performed with every precaution on the third day, it gave no indications whatever of any compound of iodine. We found it, however, in the saliva, which was secreted in immense quantities on that day. After death not a trace existed in the contents of the alimentary canal. It is also worth recording, that in this instance and four others, no trace of inflammation existed in the intestines, with the exception of a few ulcerations of the glands of Peyer and Brunner; but the air-cells of both lungs were infiltrated with pus, and their substance was preternaturally soft."

In Dr. Christison's observations on the iodine poisons, these facts are entirely omitted as far as the analysis is concerned, and a mode of detecting the hydriodates is proposed which would

inevitably lead to total failure if applied to any complicated fluid, such as the urinary excretion.

He sets out in his chemical examination, on the supposition that some combination of iodine has been taken. In order therefore to ascertain whether any *free* iodine is present, the contents of the alimentary canal are triturated with a little cold solution of starch, which would immediately cause the mixture to assume a blue colour. If the blue colour appear, the mixture is, if necessary, diluted with water, and exposed to a current of sulphuretted hydrogen, by which the iodide of starch is decolorised and converted into hydriodic acid. If no blue colour have been produced, the mixture is merely boiled with water and filtered. If the filtered fluid redden litmus paper, it should be neutralised with caustic potassa, and then reacidulated with acetic acid. He next adds the solution of the chloride of platinum, which with the most minute quantities of hydriodic acid, either causes a dark-red precipitate, or changes the fluid to a port-wine colour. It is then to be agitated with an ounce of ether, which dissolves the iodide of platinum, and separates it from the other fluids, swimming on their surface, from which it may be removed by a suction tube. The ethereal solution is, finally, to be evaporated to dryness, and the iodide of platinum heated by the spirit-lamp flame in a small glass tube, when the iodine is disengaged in its characteristic violet vapour, and condenses on the sides of the tube in dark dendritic crystals.

The above process he has found to be extremely delicate and easy of execution. It is especially applicable to the urine or saliva. Occasionally in the urine, the simple addition of cold solution of starch and sulphuric acid will strike the peculiar blue colour, which may be considered sufficient evidence. This experiment, however, is by no means so delicate as that just detailed, and it is, moreover exceedingly liable to be interfered with by the animal matters which the urine contains.—*Ut supra*.

Hydriodate of potass is preferred to iodine, as less injurious to the stomach and constitution as a medicine, but as yet no case of poisoning by it has been recorded.

Oxalic acid.—This substance, when mixed with lime, gives

a white precipitate, which is with difficulty soluble in hydrochloric acid, though very soluble in nitric acid; the oxalate of copper, of a whitish blue colour, is also insoluble in the first named acid. The nitrate of silver causes a white precipitate of oxalate of silver; if dried and heated on the point of a spatula, it burnishes its edges—it fulminates with a white fume.

Dr. Christison's process for its detection is as follows:—

“In determining the medico-legal tests for oxalic acid, it will be sufficient to consider it in two states,—dissolved in water, and mixed with the contents of the stomach and intestines or vomited matter. If the substance submitted to examination is in a solid state, the first step is to convert it into a solution. In the form of solution its nature may be satisfactorily determined by the following process:—The acidity of the fluid is first to be established by its effect on litmus paper. This being done, the re-agents might be applied at once. But it is better to neutralize the acid previously with any alkali, for then they act with greater delicacy. The remainder of the process consequently applies not only to oxalic acid itself, but also the soluble oxalates, which will presently be proved to be likewise active poisons. The tests are hydrochlorate (muriate) of lime, sulphate of copper, and nitrate of silver.

“*Hydrochlorate of lime* causes a white precipitate, the oxalate of lime, which is dissolved on the addition of a drop or two of nitric acid, and is not dissolved when similarly treated with hydrochloric acid, unless the acid is used in very large proportions. The solubility of the oxalate of lime in nitric acid, distinguishes the precipitate from the sulphate of lime, which the present test might throw down from solutions of the sulphates. The insolubility of the oxalate of lime in hydrochloric acid, on the other hand, distinguishes the precipitate from the tartrate, citrate, carbonate, and phosphate of lime, which the test might throw down from any solution containing a salt of these acids. The last four precipitates are re-dissolved by a drop or two of hydrochloric acid; but the oxalate is not taken up till a larger quantity of that acid is added.

“*Sulphate of copper* causes a bluish-white precipitate, which is not re-dissolved on the addition of a few drops of hydro-

chloric acid. The precipitate is the oxalate of copper; it is re-dissolved by a large proportion of hydrochloric acid. This test does not precipitate the sulphates, hydrochlorates, nitrates, tartrates, citrates; but with the carbonates and phosphates it forms precipitates, resembling the oxalate of copper. The oxalate, however, is distinguished from the carbonate and phosphate of copper, by not being re-dissolved on the addition of a few drops of hydrochloric acid.

“*Nitrate of silver* causes a dense white precipitate, the oxalate of silver, which, when collected on a filter, dried and heated, becomes brown on the edge, then fulminates faintly and is dispersed. The object of the supplementary test of fulmination, is to distinguish the oxalate of silver from the numberless other white precipitates, which are thrown down by the nitrate of silver from solutions of other salts. The property of fulmination, which is very characteristic, requires, for security's sake, a word or two of explanation in regard to the effect of heat on the citrate and tartrate of silver. The citrate, when heated, becomes altogether brown, froths up, and then deflagrates, discharging white fumes, and leaving an abundant ash-grey, coarsely fibrous, crumbly residue, which on the further application of heat, becomes pure white, being then pure silver. The tartrate also becomes brown and froths up, but does not even deflagrate, white fumes are discharged, and there is left behind a botryoidal mass, which, like the residue from the citrate, becomes pure silver when heated to redness. Another distinction between the oxalate and tartrate is, that the former is permanent at the temperature of ebullition, while the latter becomes brown. The preceding process or combination of tests will be amply sufficient for proving the presence of oxalic acid, free or combined, in any fluid which does not contain animal or vegetable principles.

“Of the modifications which are rendered necessary by the admixture of such principles, none are of any consequence, except those required in the case of an analysis of the contents of the alimentary canal or matters of vomiting. Here a word or two must be premised on the changes which the poison may undergo, in consequence of being mingled with

other substances in the stomach or intestines. These may either be organic principles contained in the body, or substances introduced into the body as antidotes.

“As to animal principles, Dr. Coindet and I have proved that oxalic acid has not any chemical action with any of the common animal principles, except gelatine, which it rapidly dissolves, and that this solution is a peculiar kind, not being accompanied with any decomposition either of the acid or the gelatine. Consequently oxalic acid, so far as it concerns the tissues of the stomach or its ordinary contents, is not altered in chemical form, and remains soluble in water. In such a solution, however, a variety of soluble principles are contained, which would cause abundant precipitates with two of the tests of the process—sulphate of copper and nitrate of silver; so that the oxalates of these metals could not possibly be exhibited in their characteristic forms. The process for a pure solution, therefore, is inapplicable to the mixtures under consideration; but changes of still greater consequence are affected in the poison by exhibiting antidotes during life. It is now, I believe, generally known, since the researches of Dr. Thomson, and those of Dr. Coindet and myself, that the proper antidotes for oxalic acid are magnesia and chalk. Each of these forms an insoluble oxalate, so that if either had been given in sufficient quantity, no oxalic acid will remain in solution, and the proof of the presence of the poison must be sought for in the solid contents of the stomach, or solid matters of vomiting. The following process for detecting the poison will apply to all the alterations which it may thus have undergone:—

“The first object is to procure a solution. If an antidote has not been given, the contents and tissues, or vomited matter, are to be boiled, distilled water being added if required: the acid is then to be neutralized with potass, and the whole filtered. If magnesia or chalk has been given as an antidote, the insoluble matter is to be separated by filtration, and boiled for twenty minutes in a solution of carbonate of potass, in eighteen or twenty parts of water. A double interchange of elements takes place between a part of the carbonate of potass, and a part of the oxalate of lime or magnesia, and in conse-

quence, some carbonate of lime or magnesia is thrown down, while some oxalate of potass will be found in solution. The fluid after filtration is to be acidulated with pure nitric acid, oxalic acid being now in solution, whatever may have been its original state ; the next step is to separate it from the animal and vegetable matter dissolved along with it. I have tried various plans for this purpose, but have found none to answer so well as precipitation with the muriate of lime, so as to procure an oxalate of lime, which, after being well washed, is to be decomposed by boiling it in a solution of carbonate of potass, as before. An oxalate of potass will again be found in solution. The excess of alkali is finally to be neutralized with nitric acid. The fluid is now to be tested with the three re-agents for the pure solution of oxalic acid."

The other vegetable acids, tartaric, citric, malic and acetic, are seldom or never used as poisons, and consequently do not require further notice.

Fused potass, subcarbonate of potass.—These substances attract moisture from the atmosphere and deliquesce ; they turn the syrup of violets green, and litmus paper blue, and are saturated by acids. Watery solutions of them are not decomposed by subcarbonates of soda and ammonia ; hydrochlorate of platina causes a yellow precipitate, composed of potass, oxide of platina and hydrochloric acid.

Nitrate of potass, nitre, salt petre.—When this substance is thrown on burning fuel, it ignites with a crackling noise. If concentrated sulphuric acid is poured upon this salt nitric acid vapour is disengaged. The indigo test proposed by Liebeg, is not decisive. Orfila proposed to mix some particles with water and copper filings, and add a few drops of sulphuric acid, when the orange fumes of nitrous acid will be evolved. The morphine test mentioned, when speaking of nitric acid, is the last that has been proposed, and perhaps the most certain.

Soda, lime and baryta, are seldom, if ever, used as poisons, and need not be further noticed.

Ammonia and its salts are discoverable by a peculiar odour, and by tests known to every medical practitioner.

Preparations of mercury. The oxy muriate of mercury, deuto-

chloride, bi-chloride, corrosive sublimate, is the commonest preparation of mercury employed as a poison. The mode of detection laid down by Dr. Christison, is considered almost infallible. The suspected substance is to be boiled in distilled water, and a small portion filtered for the trial. On the addition of protochloride of tin, a pretty deep ash-grey, or greyish black colour is produced. This preparation of tin is prepared, by boiling tin powder in strong muriatic acid, until the metal ceases to be dissolved; the liquid should then be preserved in a closely stoppered bottle. The chemical changes effected in this experiment are as follow:—The protochloride of tin strongly attracts more chlorine, thereby removing one atom of it from the mercury, and reducing the latter to a protochloride (calomel) which is also deprived of its one remaining atom; metallic mercury, being precipitated in the form of a dark minutely divided powder.

Corrosive sublimate when thrown on burning coals, is volatilised in the form of thick irritating fumes, which tarnish copper. If the mercurial salt be mixed with potass, in a glass tube shut at one end, and sublimed, the mercury will appear in the form of globules on the sides of the tube. If a watery solution of the corrosive sublimate is mixed with potass or lime water, a yellow precipitate occurs, a white one by liquid ammonia, a black one by the soluble hydrosulphates, and finally, the ferruginous hydrocyanate of potass causes a white deposit, which soon becomes yellow, then more or less blue, from the formation of Prussian blue. If a plate of copper is immersed in a mercurial solution, it becomes covered with a slight coat of the metal. When oxymuriate of mercury is mixed with animal or vegetable substances in solution, and the re-agents produce no effect; ether should be added, the mixture agitated, filtered and distilled with gentle heat, when a residue will be obtained, which, mixed with water affords a pure concentrated solution. A fourth part of ether should be added, which has the power of abstracting the salt from its aqueous solution. After being agitated for a few minutes, and allowed to rest for thirty seconds or more, the ethereal solution rises to the surface and may be removed; it is then to be filtered, evaporated to dryness, and the residue treated with boiling water, affording the evi-

dence already mentioned, on being tested with protochloride of tin. This preparation of mercury may be detected in vomited matters, by drying them in a sand bath, mixing them with a solution of potass in alcohol, and calcining them in a tube at a red heat, when the metal will appear in globules in the neck of the tube.

The following mercurial preparations—the sulphate, subnitrate, red precipitate, acetate and cyanuret, when mixed with organic matter, may be decomposed, and the mercury separated by boiling with fused or caustic potass for an hour, an excess of nitric acid is to be added, which precipitates any caseous and albuminous matter that may be present; it is to be filtrated and then concentrated by evaporation. If a slip of gold, bound round with a harpsicord wire, be plunged into the fluid, an amalgam of gold and mercury will be formed; this is to be scraped off and sublimed in a glass tube, when globules of mercury will appear.

When the corrosive sublimate is applied to a wound or ulcer, it is absorbed, and causes inflammation of the heart, inducing brownish black patches on its internal membrane, as well as on that of the intestinal canal. When taken into the stomach, it produces greyish white patches, which do not result from any other poison. The best antidote is white of egg, which reduces the salt to calomel. The ordinary symptoms of irritant poisoning will be present, and they have been already described. If the nitraté be the poison, the best antidotes are muriate of soda and carbonate of ammonia. The various oxides of mercury are less virulent poisons than the sublimate. The sulphate and cyanuret have induced death, but are seldom employed. Dr. Christison's chapter on poisoning by mercury, and of the effects of that medicine on the body, is one of the best ever written, and ought to be maturely considered by every medical practitioner.

Compounds of arsenic.—Metallic arsenic has an iron-grey colour, is fragile and brilliant, when recently broken. It oxidates in air, water or alcohol. When exposed to the air, it becomes rapidly tarnished, and forms a black powder. It sublimes at 356° F. arh. and in close vessels it condenses unchanged; but in the open air it rises in white fumes, with an alliaceous odour,

and becomes white oxide, which consists of one atom of metal and two of oxygen, or of thirty-eight parts of the former, and sixteen of the latter. Metallic arsenic has a strong affinity for oxygen, which it rapidly attracts; when two acids are formed, the arsenious and the arsenic, the former appears in brilliant octohedral crystals.

The principal compounds which are formed by arsenic, are the arsenious acid or white oxide of arsenic, the arsenite of copper or mineral green, the arsenite of silver, the arsenite of potass, the arsenic acid, the arsenite of potass, the yellow sulphuret or orpiment, the red sulphuret or realgar, and the impure sulphuret termed king's yellow; there is moreover a black compound termed fly powder, little known in this country, composed of the metal and arsenious acid.

"The arsenious acid, when newly prepared, exists in the form of white, transparent, vitreous lumps, which gradually become opaque by keeping. It is usually sold in a white powder; when heated to 380° Fahr. it is sublimed, and condenses unchanged in minute octahedrons. The taste of arsenic has been disputed, but Dr. Christison inclines to the belief that it is entirely insipid, and that the peculiar taste sometimes attributed to it, depends on the irritation which it quickly causes in the mouth. In this opinion we altogether coincide. The arsenious acid of the shops is soluble in boiling water in the proportion of 115 to 1000 parts, and twenty-nine parts are retained on cooling; temperate water again takes up, in thirty-six hours, 12-5. The solubility of the acid in water is impaired considerably by the presence of various organic materials, such as mucus, albumin, nous or astringent matter.

"The arsenious acid forms salts with the various salifiable bases, of which the most remarkable are the arsenites of silver, copper, lead, lime, potash and ammonia, all of which may be prepared either by bringing the arsenic acid into direct contact with the base, or by decomposing a salt of the base (such as the muriate of lime, nitrate of silver, acetate of lead or sulphate of copper,) by means of a soluble neutral arsenite.—Arsenious acid, added by itself to one of these salts, produces no decomposition, since its affinity for the base is weaker than that of the acid with which the base was previously associ-

ated. This fact is of the utmost importance, and deserves to be attentively studied.

“The arsenite of copper, is a green compound, formed by adding the arsenite of potash, soda or ammonia, to the sulphate of copper. The arsenite of silver is yellow, and formed with the nitrate of silver in the same way. The arsenites of lead and lime are both white.

“The arsenic acid never comes under the notice of the toxicologist in its free state, but it frequently occurs in combination with potash, as the arsenite of that alkali. This compound is formed by deflagrating arsenious acid with nitrate of potash, by which it obtains another atom of oxygen. Arsenic acid is produced, which unites with part of the potass, forming a neutral salt; the nitrate of silver added to the salt (both in solution,) causes the precipitate of a brown-red arseniate of silver.

“Of the sulphurets of arsenic, two only are of toxicological importance, namely, the pure orpiment and the impure king’s yellow, the former occurs abundantly as a natural product, and is artificially produced when sulphur is treated with arsenious acid, or when sulphuretted hydrogen is passed through a solution of that substance. Both these sulphurets of arsenic are exceedingly soluble in alkaline solutions.”—(O’Shaughnesy, *op. supra. cit.*)

Treated with potass and charcoal, in the manner hereafter mentioned, metallic arsenic will be produced. Arsenious acid is dissolved in boiling hydrochloric acid, and precipitates on cooling. It is very soluble in water, and an addition of hydrosulphuric acid, causes a precipitate of yellow sulphuret of arsenic, which is entirely soluble in ammonia. The ammoniacal deuto-sulphate of copper, causes a green precipitate. On boiling this acid with potass, a yellow precipitate takes place by nitrate of silver. When white oxide of arsenic is mixed with vegetable and animal matters, the following processes are recommended for its detection :—

A small quantity of these substances is to be boiled in distilled water for fifteen or twenty minutes, filtered and tested with the various re-agents already mentioned. The hydrosulphuric acid or soluble hydrosulphates, to which a few drops

of nitric acid are added, are the best tests, as the yellow sulphuret of arsenic is detected with difficulty; when such suspected matter is much coloured, it will not be easy to recognize the precipitates; and then a concentrated solution of chlorine should be added, and by this means the arsenious will be converted into arsenic acid, which is very soluble. On filtering the liquor, we are to observe if it give a white precipitate with lime water or baryta, a whitish blue with acetate of copper, a brick red with nitrate of silver. If this liquor is boiled with hydrosulphuric acid, the yellow sulphuret of arsenic is formed.

When the liquor obtained by the first operation contains animal matter which prevents the deposition of precipitates, it is to be evaporated, an excess of nitric acid is to be added and carried to the boiling point, which will destroy the animal matter; the excess of acid is to be saturated with potass, a few drops of hydrosulphuric acid gives a precipitate of yellow sulphuret of arsenic.

The contents of the stomach may contain arsenious acid in a solid or fluid state; when solid, it may be mechanically mixed, and subside on simple decantation. If the quantity amount to a grain, it is said to be large, and is to be divided into three portions; the first is to be mixed with charcoal or black flux, prepared by deflagrating one part of nitrate of potass with two of supertartrate of potass, and sublimed in the manner mentioned by Dr. Christison in the subsequent extract; the second part should be boiled in distilled water until dissolved, and a drop or two of the solution placed on three different watch crystals; nitrate of silver should be added to one, when a yellow precipitate takes place; sulphate of copper and ammonia to the second, when a deep green deposit occurs; and sulphuretted hydrogen should be brought in contact with the third, when a yellow precipitate or stain will be produced.

Dr. Christison examines the tenth of a grain in the following manner:—

“The only instrument which should be used by the inexperienced, and the instrument which the chemist will always prefer when it is at hand, is a glass tube. When the quantity

of the oxide is very small, it should not exceed an eighth of an inch in diameter.

“The proper material for reducing the oxide of arsenic, is freshly ignited charcoal. With this substance the whole metal of the oxide of arsenic is disengaged. The black flux, which is usually recommended, is ineligible, if the quantity of oxide is very small; for only a part of the metal is disengaged, the remainder continuing in the flux, probably in the form of arseniuret of potassium. If the quantity operated on is large, it should be mixed with the charcoal or flux before it is introduced into the tube; if on the other hand it is small, a better plan is to drop it into the tube and cover it over with charcoal. The materials are to be introduced along a little triangular gutter of stiff paper, if the tube is large; but with a small tube it is preferable to use a little glass funnel, to which a brass or silver wire is previously fitted, for pushing the matter down when it adheres. In either of these ways the side of the tube is kept quite clean, which is a point of great consequence, especially when the black flux is used. In delicate experiments the material should not be closely impacted in the tube. By far the best method of applying heat is with the spirit lamp, at first suggested by Mr. Phillips. The upper part of the material ought to be heated first, and with a very small flame. Afterwards the heat should be applied to the bottom of the tube, the flame being previously enlarged by drawing out the wick with a pair of forceps. A little water, disengaged in the first instance, should be removed with a roll of filtering paper, before a sufficient heat is applied to sublime the metal. Whenever the dark crust begins to form, the tube should be held quite steady, and in the same part of the flame. By these precautions a well-defined crust will be procured with facility, even by a mere tyro in practical chemistry, as I have ascertained by repeated trials.”

The appearances of the arsenical crust, formed by the process stated in the concluding paragraph of the last article, are, according to Dr. Christison, imitated by no substance in nature. This is a most important conclusion, as Dr. Paris, Dr. Smith and Dr. Beck, have questioned the accuracy of the test by reduction. If any one persevere in denying the value

of this test, the following process is considered certain—indeed, almost infallible. It consists of oxidation by heat, according to Dr. Christison:—

“The best method of applying this part of the test is to heat the ball containing the flux deprived of arsenic, to attach a bit of glass tube to the end, and to draw it gently off in the spirit flame, taking care to prevent the flux being driven forward on the crust. This being done, the whole crust, or, if it is large, a portion of it, is to be chased up and down the tube with a small spirit lamp flame till it is all converted into a white powder. In order to show the crystalline form of the powder distinctly, let the flame be reduced to the volume of a pea, by drawing in the wick, and let the part of the tube containing the oxide be held half an inch or an inch above it. By repeated trials sparkling crystals will at length be formed, which are octahedrens, the crystalline form of arsenious acid. The triangular facettes of the octahedrens may be sometimes seen with the naked eye, though the original crust was only a fiftieth of a grain or even less; and they may be always seen with a lens of four powers, the tube being held between the eye and a lighted candle, or a ray of sunshine, either of which is preferable to the diffuse daylight for making this observation. For the success of the oxidation test, it is indispensable that the inside of the tube be not soiled with the flux, if the flux contained an alkali; because the alkali would unite with the oxide. It is also requisite not to heat the tube suddenly so as to redden it before the oxide is sublimed; because then the oxide unites with the glass, forming a white, opaque enamel.

“Such is the best and only process I should recommend for the detection of arsenic when in its solid form.”

When arsenious acid is mixed with the contents of the stomach, we should remember that various animal and vegetable principles are present, such as albumen, mucus, tannin, and caseum. To separate the acid, we must add silver, copper, lime or sulphur, which will form a compound, from which the poison can be subsequently disengaged. But Dr. Christison has proved the fallacy of these tests. He has shown that nitrate of silver will cause a yellow precipitate with animal matter, similar to that produced when arsenic is present. A simi-

lar effect resulted from the sulphate of copper. He recommends the following experiment in preference to all liquid reagents. His object is to procure sulphuret of arsenic, which he accomplishes by transmitting sulphuretted hydrogen through the solution. Acetic acid is to be first added in excess to the suspected liquor, for the purposes of neutralising any alkali that may be in the stomach, and of precipitating animal principles. The fluid is filtered, and a stream of sulphuretted hydrogen is passed through it for a quarter of an hour, when, if arsenic is present, a lemon coloured precipitate is thrown down; or if the quantity is small, it is suspended in the fluid; in both cases it is necessary to boil the fluid, in order to expel any excess of sulphuretted hydrogen, which would otherwise retain the sulphuret of arsenic in solution. This test discovers arsenious acid in one hundred thousand parts of water. The sulphuret of arsenic is to be mixed with recently ignited charcoal and carbonate of soda, and reduced in a tube as already described. The following mode of deflagrating the sulphuret of arsenic is recommended, in preference to those proposed by Berzelius and Christison, by the Commentator on the processes of the latter, in the *Lancet*:—

“About a scruple of powdered nitre should be melted by the heat of a spirit lamp in a green glass tube about six inches long and half an inch in diameter; the impure sulphuret of arsenic should then be dropped into it in minute particles, one by one; in this manner the decomposition of the organic matter usually takes place without flame, or at most with minute scintillations, and the sulphuret of arsenic is converted into the sulphate and arseniate of potass; the tube should then be allowed to cool, and boiling water added to dissolve the saline mass; the solution should then be filtered. Instead of lime water, we should now add the nitrate of silver, which causes a brown red precipitate of the arseniate and sulphate of silver, which is exceedingly insoluble in water. Finally, this precipitate should be dried, mixed with recently ignited charcoal, and reduced in a tube.

“We feel confident that this method will succeed in experienced hands in many instances in which the complex pre-

precipitations of animal matter by the nitrate of silver, would frustrate the analyser's expectations."

The following information as to the detection of the other preparations of arsenic, by the same writer, are so valuable that I place them before the reader:—

"Such are the several modes of proceeding in our search for arsenious acid. As we before observed, however, there are many other arsenical poisons which would elude this mode of analysis: we may particularize the arsenite of copper (Scheele's green), and the yellow sulphuret of arsenic, orpiment, and king's yellow. The two last, being entirely insoluble in water, remain undissolved in the solid contents of the stomach; it will be recollected also, that the arsenious acid, on the one hand, is liable to be converted into the yellow sulphuret by sulphuretted hydrogen in the stomach, or in the alimentary canal; and, on the other, that the orpiment of the shops almost invariably contains the arsenious acid.

"After the boiling and filtering, therefore, which constitute the first step in Dr. Christison's process for the arsenious acid, the solid matter should again be collected, introduced into a stoppered phial, and some weak ammonia added, which will take up either orpiment or Scheele's green. After a few hours the mixture should be filtered, and acetic acid added to the fluid which passes through, when, if it contain the arsenite of copper, a green precipitate is slowly formed; if it contain the sulphuret of arsenic, a yellow precipitate is soon deposited.

If the precipitate be green, we have to seek for two metals in it, arsenic and copper. The first is recognised easily, by mixing the powder with charcoal and dried carbonate of soda, and heating it to redness in a tube, when the metal is reduced and sublimed, leaving behind it the copper, which may be detected by dissolving the residuum in dilute nitric acid, evaporating to dryness, mixing the dried mass with an equal quantity of borax, and acting on it with the blow pipe on charcoal. In the exterior flame, it forms a globule of beautiful green glass, which in the interior flame is coated with metallic copper, though the quantity be not more than the 500th part of one grain. For directions on the use of the blowpipe, see the article on lead.

"If the deposition from the alkaline solution be yellow, it should be reduced in the manner already detailed, which it is superfluous now to repeat. It is here, however, necessary to re-dissolve the residuum in the tube, in water, and add a drop or two of a solution of the acetate of lead, which becomes blackened, both experiments indicating that the yellow precipitate is the SULPHURET of arsenic.

"The arsenical poison may also have been the arsenite of potass. Orfila has besides very recently asserted, that the arsenious acid is liable to be converted into the arseniate of ammonia, when the body in which it is contained, has long been exposed to decay. A portion of the fluid prepared with acetic acid, according to Dr. Christison's plan, should, therefore, before the transmission of sulphuretted hydrogen through it, be touched with nitrate of silver, which in any solution will show the presence of the arseniate. Should a brown precipitate occur, it is to be collected for reduction with charcoal. The remark, however, applied to Dr. Venables' proposal, must be remembered here. Great difficulty, arising from empyreuma, will occur in the reduction; a difficulty which, as yet, we have not been able to overcome.

"How far the additional step of examining the solids is actually necessary in this country, it may be difficult to determine. Dr. Duncan has seen one case of poisoning by Scheele's green, which he detected in pills, and a second of poisoning by orpiment, which had been mixed with tea. At any rate the additional experiment turns the solid substances to account, which in Dr. Christison's analysis are altogether neglected."—*Lancet*, 1831, vol i.

Sedillot informs us that there are two sulphurets of arsenic, orpiment and realgar, from which, if heated with potass, metallic arsenic will be obtained by sublimation. MM. Geizer and Reiman, digest the mixture for some time with liquid ammonia, it is then filtered, and hydrochloric acid added in excess. If a yellow precipitate occurs, it is an indication of arsenic; but when there is no precipitate, we cannot pronounce negatively; the fluid is to be evaporated to dryness, more ammonia is added, and the admixture is saturated as before with hydrochloric acid; on adding a few drops of hydro-

sulphuric acid, a yellow precipitate takes place, if arsenic is present.

Arsenates of potass, soda and ammonia, when projected on live coals, volatilise in the form of arsenic acid. Mixed and heated with charcoal, metallic arsenic will be obtained.

Action of Arsenic, and the Symptoms it excites in Man.—Arsenic acts in two ways, most commonly by inducing inflammation of the gastro-intestinal mucous membrane, or by lowering or arresting the action of the heart. Again, its effects may be purely narcotic. It may destroy life, and leave no mark of disease to account for death. It proves deleterious when applied to wounds, and sometimes even to ulcers, and when injected into the vagina or rectum.

To whatever part it is applied, unless death speedily follow, it almost always produces inflammation of the stomach; even this inflammation is in some instances more intense when the poison is applied to the external surface of the body. From the experiments of Morgan and Addison, all poisons appear to act through the nerves. Dr. Christison thinks farther experiments necessary to confirm this conclusion; but he has not offered a valid objection to this opinion.

Medical witnesses are often asked what is the smallest dose of arsenic which proves fatal? This question cannot be answered but vaguely. The quantity is not as yet determined; and of course a great deal must depend on the state of health, age, habit, diet, in a word, on concomitant circumstances.—Hahnemann thinks four grains will prove fatal in twenty-four hours. Christison has related a fatal case of a child four years old, in which death took place in six hours, from four and a half grains in solution. The smallest fatal dose of solid arsenic he has read of was thirty grains. He thus describes the order of symptoms of poisoning with arsenic:—

“The symptoms of poisoning with arsenic may be advantageously considered under three heads. In one set of cases there are signs of violent irritation of the alimentary canal, and sometimes of the other mucous membranes also, accompanied with excessive general depression, but not with distinct disorder of the nervous system. When such cases prove fatal, which they generally do, they terminate for the most part in

from twenty-four hours to three days. In a second and very singular set of cases there is little sign of irritation in any part of the alimentary canal; perhaps trivial vomiting or slight pain in the stomach, sometimes neither; the patient is chiefly or solely affected with excessive prostration of strength and frequent fainting; and death is seldom delayed beyond the fifth or sixth hour. In a third set of cases life is commonly prolonged at least six days, sometimes much longer, or recovery may even take place after a tedious illness; and the signs of inflammation in the alimentary canal are succeeded or become accompanied about the second or fourth day or later by symptoms of irritation in the other mucous passages, and more particularly by symptoms indicating a derangement of the nervous system, such as palsy or epilepsy. The distinctions now laid down will be found in practice to be well defined, and useful for estimating in criminal cases the weight of the evidence from symptoms."

It is now ascertained that persons to whom arsenic is criminally administered, combined with food, do not experience that acrid burning taste in the mouth and throat, so long considered characteristic of this poison. The first symptoms are usually sickness and faintness, which generally commence in fifteen minutes, though in some cases they do not happen—indeed, no symptom has been observed for five hours. (Orfila.) The patient commonly survives twenty-four hours, seldom more than three days, but may be destroyed in three hours, or survive for weeks. The symptoms commence in a few minutes, and this is a point of great importance to the medical jurist, as it enables him to detect persons who allege they had not felt them for some hours after the supposed poison was exhibited. In general, we observe in a few minutes after the sickness has commenced, that there is intense burning pain in the stomach, which is greatly aggravated by pressure. Retching and vomiting ensue, especially when drink is taken, there is often a sense of dryness, heat and tightness in the throat, exciting a desire to drink; but this train of symptoms may be absent. The powers of swallowing and speech are greatly diminished, and there is often a sense of suffocation. The fluid which is vomited is yellow or green, and sometimes streaked

with blood. There is sometimes diarrhœa or bowel complaint, or a sense of burning heat, or actual inflammation along the digestive tube from the mouth to the anus. In other cases, the large intestines do not suffer. Again, the genito-urinary organs of both sexes may be irritated or inflamed, and of course their functions deranged. In consequence of the intense pain or inflammation in the stomach or bowels, the diaphragm cannot act freely, and the respiration will be more or less impeded. There are convulsive twitchings of the trunk and extremities, violent cramps of the legs, the pulse is small and soon imperceptible, the extremities cold, clammy and livid, the countenance is pale and sunk, the tongue and mouth are dry, and often covered with white ulcers or aphthæ, delirium supervenes, and death closes the scene. In some cases the person expires calmly, in others with convulsions. When the sufferer survives for days or weeks, the body may be covered with eruptions of various kinds, sometimes resembling small-pox, petechiæ, miliaria, &c. In some cases a remission of all suffering takes place on the second day; but this is delusive, as all the bad symptoms usually return with increased force.

These are the chief symptoms of poisoning by arsenic, but it is always to be recollected, that many of them may be absent, others less violent, and that they are not all present in every case. In a former number of the *Lond. Med. and Surg. Jour.*, (*Med. Repos.* vol. ii.) Dr. Yelloly, of Norwich, related the case of a lad, aged sixteen, who died in twenty hours, from having taken half an ounce of the white oxide—he never complained of pain, though gastro-intestinal inflammation was indicated by sickness, vomiting and purging. Another extraordinary circumstance in this case was the slowness of the pulse, which was 40, and after some time only 30. Upon the whole, however, the symptoms of poisoning by arsenic are in general very uniform.

In some cases, when the patient dies within four or six hours, there is not sufficient time for the developement of the symptoms related above. Here we have faintness amounting to syncope, stupor, coma or convulsions. There may be slight vomiting, but the symptoms of narcotism are prominent. In these cases, though half an ounce of arsenic may be found

in the stomach, this organ will be healthy. Yet the patient has been destroyed in eight hours. The poison is supposed to act on the remote organs, of course by nervous sympathy. Morgagni, Chaussier, Orfila and Christison cite examples of poisoning by arsenic, in which the stomach and bowels were healthy. Again, the inflammatory symptoms may disappear, or nearly so, and nervous symptoms supervene, as coma, palsy of the arms or legs, hysteria or mania. These occur when the patient has taken a small quantity, or from having vomited soon after, or when death takes place after a protracted illness. Delirium, tetanus, convulsions and coma, may be produced by the poison under notice. The preceding remarks contain, I believe, all that is absolutely determined of the effects of arsenic, when swallowed, on the human subject. I have drawn information from all sources, and very largely from Professor Christison, whose language I have often condensed. Every fact stated might be corroborated by authorities, many of which will be found in his erudite and standard work. The object of these essays is to inform the student and young practitioner of the exact state of science on all topics discussed, and not to load his memory by references.

Medical jurists and toxicologists are almost universally of opinion, that symptoms alone can never supply decisive proof of the administration of arsenic. This opinion is correct in the majority of cases, as the symptoms are only burning pain in the stomach and bowels, vomiting and purging, oppressed circulation, excessive debility, and speedy death. These symptoms are characteristic of cholera, but I fully agree with Dr. Christison, that when the inflammatory and nervous symptoms, already detailed, have been present, the evidence is conclusive. This able author relates some cases in proof of this conclusion, which no jurist can question. He properly maintains, that it is probably within the bounds of possibility, but in the highest degree improbable, that disease can produce the train of symptoms consequent on poisoning by arsenic.

The Morbid Appearances do not always enable us to pronounce a positive opinion that poison has been taken. In many cases there will be no redness in the mucous membrane of the gullet, stomach, or intestinal tube, though in general such ap-

pearances are present. Nor can these be distinguished from ordinary results of disease. This fact is well attested by M. Andral, in his account of hyperemia of the gastro-intestinal mucous surface. (*Pathology*). Black elevated spots on this surface sometimes appear, and, in the opinion of the Edinburgh Toxicologist, are held to be diagnostic; but Andral mentions such appearances in cases in which there were no symptoms indicative of intestinal disease. The softening of the mucous coat of the stomach, or perforations of the three coats of this organ, are the result of disease, as well as the effects of poisoning by arsenic; and here I must remark, that Andral thinks more evidence is wanted to warrant the conclusion of Mr. Hunter, which ascribed such condition to the influence of gastric fluid after death. *Op. cit.* The older jurists said arsenic eroded or corroded the stomach, which is a palpable mistake; as this substance has no chemical affinity for animal matter, and is not a corrosive. The presence of black clots of blood in the stomach, is a strong proof that arsenic has been administered. It is to be recollected, however, that in mælena or yellow fever, the black fluid, or black vomit, as it is vulgarly denominated, may exist in large quantity in this organ without any breach of surface.

Arsenic is generally found adherent to the stomach, though vomiting may have continued for thirty-six hours. Every white powder found in the stomach is not to be mistaken for arsenic; the proper tests must determine the presence of the poison. It is singular that the rectum may be ulcerated, and the rest of the large and small intestines may be healthy. The mucous membrane of the windpipe and lungs may be inflamed, as also the inner surface of the heart, or there may be absolute inflammation of the lungs. The cardiac appearance is equivocal, though much dwelt upon by Sedillot. The sexual organs are said to be black and congested, but little reliance is to be placed on these appearances. Dr. Christison cites numerous cases to prove, that when arsenic is retained in the stomach and bowels, putrefaction is impeded even for days, weeks, or months. It has been said that the vessels of the brain are congested by the poison under notice; but little reliance can be placed on such appearances. Upon the whole,

little certainty can be placed on the pathological appearances produced by arsenic, though they afford strong presumptive evidence.

With respect to the treatment of this species of poison, it is now determined that the chemical antidotes are of little use. Milk is the best fluid, and should be drank freely. If vomiting come on, the milk should be continued, and inflammation prevented by free depletion, and large doses of opium; local bleeding is of little use. Castor oil and opiate suppositories are highly valuable.

Preparations of Copper.—Two preparations of copper have been used as poisons, the deuto-acetate (crystallized verdigris) and the deuto-sulphate (blue vitriol.) Solutions of these, as well of nitrate of copper, are of a fine blue colour. Potass, soda, and baryta decompose them, and precipitate the deutoxide in the state of hydrate. Hydro-sulphuric acid and the soluble hydro-sulphates, give a precipitate of the black sulphuret of copper. When a plate of iron is immersed in the solution, it is covered with a coat of copper.

The sulphate of copper is used instead of yeast for the fermentation of bread. The preparations of copper can seldom be disguised, on account of their colour, and are rarely administered as poisons. It is to be borne in mind, that there is scarcely an article of food or drink which may not be impregnated with copper, if kept in copper vessels after having been boiled. The impregnation does not take place during boiling, but after cooling, and is caused by alimentary matters invariably containing some acid or fatty matter. The detection of combinations of copper in vegetable and animal mixtures, is not as yet satisfactorily determined. The reader will find all the information on this subject in Dr. Christison's work on Poisons. The white of eggs is the best antidote for the poisonous preparations of copper.

Preparations of Antimony.—Tartarized antimony, or tartar-emetic, is the preparation of antimony which most commonly produces poisonous effects.

“By far the best re-agent,” says Dr. Christison, “is *sulphuretted hydrogen*. In a solution containing only an eighth part of a grain per ounce, it strikes an orange red colour, which,

when the excess of gas is expelled by heat, becomes an orange red precipitate; and if the proportion of salt is greater, the precipitate is thrown down at once. The colour of the precipitate is so peculiar as to distinguish it from every other sulphuret; but if any doubt regarding its nature should occur, it may be known at once by the process of reduction with hydrogen gas.

“Tartar-emetic, like the soluble salts of mercury and copper, is decomposed by various organic principles. All vegetable substances that contain a considerable quantity of tannin, have this effect; of which an example has been already mentioned in the action of infusion of galls. Decoctions of cinchona bark decompose it still more effectually. The animal principles do not act on tartar-emetic, with the exception of milk, which is slightly coagulated by a concentrated solution. Many vegetable and animal substances, though they do not decompose it, alter the operation of the fluid tests. Thus tea, though it does not effect any distinct decomposition of the salt, will prevent the action of the gall nut infusion; and French wine gives a violet tint to the precipitate with that test and with sulphuric acid. The sulphuretted hydrogen gas, however, acts, according to Dr. Turner, under all circumstances, and always characteristically, whatever the colour of the fluid may be. He found, that when transmitted through a diluted solution in tea, porter, broth and milk, with certain precautions to be mentioned presently, he procured a precipitate which either showed its proper colour at once, or did so at the margin of the filter on which it was collected.

The best mode of showing the presence of antimony is the method proposed by Dr. Turner. He places a little of the sulphuret of antimony in a horizontal tube, transmits hydrogen gas through it, and when all the air of the apparatus is expelled, heat is to be applied to the sulphuret with a spirit lamp. Sulphuretted hydrogen is evolved, and metallic antimony is left if the current of hydrogen is gentle, or it is sublimed if the current is rapid. When there is much animal or vegetable matter present, the metal is not always visible. It is to be heated in an open tube, when it oxidates, and sublimes in the form of a white powder, which glimmers, but is not crystalline

and adamantine, like oxide of arsenic.”—(On the Detection of Antimony in mixed Fluids. Edinburgh Med. and Surg. Jour. xxxviii. 71.)

When tartar-emetic is taken into the stomach, it produces vomiting, violent pain in the stomach, colic pains and purging; in a word, inflammation of the gastro-intestinal mucous membrane. There are violent cramps of the limbs. In some cases there have been eschars and perforations in the intestinal canal. This medicine is now given in repeated doses to the extent of sixty or eighty grains in pneumonia, without any poisonous effects—a fact which proves it is not so dangerous as formerly supposed. When applied to the skin, it sometimes induces severe nausea; two instances of which have fallen under my observation. One patient was an adult male, the other a female. The best antidote for this poison is a decoction of yellow bark, or the tincture, if it can be procured, or the bark in powder. Vomiting should be first induced by copious draughts of warm water, or by tickling the throat with a feather, or a finger. When the poison is evacuated, opium is useful, but we must recollect the danger of gastro-enteritis, and act accordingly.

Preparations of Tin, Silver, Gold, Bismuth, Chrome and Zinc, are rarely employed as poisons, and very little is known of their effects. The reader must consult systematic works on jurisprudence for information as to the effects of these metals.

Preparations of Lead.—The preparations of lead which claim especial attention are, litharge, red lead, white lead, and sugar of lead, or, according to chemical nomenclature, the protoxide, deutoxide, carbonate, and acetate. The commentator on Dr. Christison's work in the *Lancet*, objects to the re-agents proposed by that distinguished writer, namely, the chromate of potass, hydriodate of soda or potass, and metallic zinc. These, he says, may be applied, by an inexperienced person, to a copper solution, and positive testimony given as to the detection of lead. He, therefore, prefers the reduction process, which is extremely easy, and affords the most satisfactory evidence.

A small hollow should be scraped in a piece of dense fine

charcoal, and in this the sulphuret should be placed, moistened with a drop of distilled water, in order to make it adhere to the support; it should then be touched with the *interior* or blue flame of the blow-pipe, when the reduction almost instantly takes place. The little globule of metal should then be removed and examined, for we have now to distinguish it from silver; in the pure state it is a white, shining, and soft metal; the globule should, therefore, be flattened by gentle pressure, replaced on the charcoal, and touched with the *furthest* point of the flame, when it quickly disappears, and on withdrawing the charcoal, two beautiful concentric circles of red and yellow remain, being the yellow and red oxide of lead. Nothing can be so conclusive as this experiment, and its success is perfectly certain.

When a soluble salt of lead is taken in an excessive dose, the phosphate of soda, or sulphate of soda or magnesia, should be administered as soon as possible, and vomiting speedily excited; an insoluble sulphate or phosphate is thus produced, and an effectual antidote supplied. A point now remains for consideration, which Dr. Christison has entirely omitted, viz. the means of detecting lead in the condition of the extremely insoluble phosphate or sulphate contained in the vomited matters; for this purpose the matters should be agitated with a considerable quantity of water; this mixed with solid matter, the phosphate or sulphate from its weight quickly subsides, and should be collected, washed, and heated to redness with charcoal in a glass-tube; phosphuret, or sulphuret of lead is thus generated, either of which may be reduced by the blow-pipe in the manner above directed; the reduction should be accomplished in the interior flame, when, if the salt be the phosphate, which the analyst should always inquire, the process presents a modification thus described by Griffin, in his excellent *Manual on the Use of the Blow-pipe*, p. 177, and for the accuracy of which description we can vouch from repeated trials.

“Before the blow-pipe alone on charcoal, in the *exterior* flame it melts, and on cooling forms a dark-coloured polyhedral crystal, the faces of which present concentric polygons. In the interior flame it exhales the vapour of lead; the flame

assumes a bluish colour, and the globule on cooling forms crystals, with broad faces inclining to pearly whiteness. At the moment it crystalizes, a gleam of ignition may be seen in the globule. If the crystallized mass be pulverized and heated with borax, there results in the first place a milk-white opaque enamel; upon the continuance of the heat this effervesces, and at length becomes perfectly transparent, the lower part of it being studded with metallic lead.

“Another and still easier mode is, to suspend the phosphate or sulphate in water, transmit sulphuretted hydrogen, wash and reduce by the blowpipe-flame. In both cases the concentric circles of red and yellow oxide remain on the charcoal when the flame is removed.”

The foregoing extracts and remarks are amply sufficient for the guidance of the examiner of matters of food, drink, &c. suspected to be adulterated with lead, with the exception of cheese, which has been, and is, occasionally, coloured with red lead. In this case the cheese should be chopped into fragments and suspended in water, when, if blackened by sulphuretted hydrogen, the indication may be considered decisive, without further trouble.

Dr. Christison's chapter on lead is still the most interesting ever published. In relation to medical police, it is of immense importance. The narration of the effects of water on lead will be perused with advantage by the best informed of the faculty. It would be superfluous to copy it here, as the original is in the hands of every scientific practitioner.

Preparations of Baryta.—These have been as yet so seldom employed as poisons, except on the inferior animals, that the student of toxicology may be spared the trouble of considering their detection at present.

Irritative Vegetable Poisons.—This class of poisons seldom comes under the consideration of the medical jurist, and according to Dr. Beck, “vegetable poisons are seldom the instruments of murder.” When death is produced by their operation, it generally is caused by suicide or accident, and the coroner's inquest is the only judicial investigation which takes place. Besides the greater portion of these poisons so seldom produce death, that the young jurist need not load his memo-

ry with most of them, and he must necessarily be acquainted with the effects of several of them, from his study of the materia medica. A detail of these is evidently unimportant in a compendious work of this description. It is sufficient for our purpose to state that these poisons have an acrid, sharp, and bitter taste; that they produce nearly the same symptoms as arsenic, mercury, &c. and that the morbid appearances are nearly the same as those originating from the acrid mineral poisons. The symptoms produced by both classes cannot in many instances be distinguished from those arising from diseases.

Orfila's classification of irritative poisons is adopted in these countries and in the United States of America, and is decidedly the best hitherto proposed. He divides them into four classes;—1, the irritating, corrosive, or acrid; 2, the narcotic or stupifying; 3, the narcotico-acrid; and 4, septic or putrefiant.

Irritative or acrid Poisons, are veratrum album (white hellebore,) veratrum viride (green hellebore,) helleborus niger (black hellebore,) helleborus fœtidus (fœtid hellebore,) bryonia dioica (bryony,) momordica elaterium (wild cucumber,) cucumis colocynthis (bitter apple,) stalagmitis cambogioides (gamboge,) daphne gnidium (spurge flax,) daphne mezereum (mezeleon,) ricinus communis (castor oil plant,) euphorbia officinarum (euphorbia,) juniperus sabina (savine,) rhus radicans et rhus toxicodendron (poison oak,) rhus vernix (poison sumach,) anemone pulsatilla (wind flower, a—pratensis, sylvestris, and nemorosa, ænanthe crocata (hemlock dropwort,) ranunculus acris (butter cups,) r—sceleratus (water crow-foot,) r—flammula, bulbosus, ficaria, alpestris, &c. colchicum autumnale (meadow saffron,) chelidonium majus (celandine,) delphinium staphisagria (stavesacre,) narcissus pseudonarcissus meadow narcissus (daffodil,) gratiola officinalis (hedge hyssop,) jatropa curcas (Indian nut,) scilla maritima (squill,) sedum acre (house-leek, wall-pepper,) convolvulus scammonia (scammony,) some of the species of lobelia, croton tiglium, and arum maculatum (wake robbin;) there are several other plants included under this head, but which are so rarely administered

criminally, that they need not be mentioned. Among these are to be included a great number of the drastic purgatives.

The treatment of persons who have taken the poisons of this class, consists in evacuating the stomach by emetics, the exhibition of mucilaginous drinks, and should stupor supervene, the administration of coffee, according to Orfila.—Should inflammation arise, it is to be treated by the usual anti-phlogistic measures.

Narcotic Poisons.—Narcotic poisons produce stupor, drowsiness, paralysis, apoplexy and convulsions, and most of them are employed as medicines. Their primary action is on the brain and spinal marrow, to which parts they are transmitted with the blood, according to the general opinion; but Morgan and Addison contend that they act on the nerves of the blood vessels, or other parts to which they are applied, as mucous surfaces, and not through the blood. This evidence is the most correct and accurate. However they may be introduced into the system, whether through the stomach, rectum, cellular, serous or mucous tissues, they always produce the same symptoms. The aggregate of these symptoms is denominated narcotism.

Narcotism commences by a sense of weight in the head, giddiness, headache, obscurity of vision, stupor or perfect insensibility, followed by nausea, vomiting, profound sleep, which amounts to apoplexy, the respiration is stertorous or slow, the pulse full, slow, and strong, becoming small, frequent, irregular and intermittent. In some cases the imagination is vivid, there may be gay or furious delirium, followed by plaintive cries, violent pains, and convulsions. The extremities flexible, paralysis follows, impressions are unperceived, the pupil is contracted or dilated; and profound sleep or convulsions precede death.

Each poison has its peculiarities, the effects of each being generally the same from certain doses on different individuals.

Autopsy.—There is generally congestion in the vessels of the brain, its membranes and in the lungs, but such appearances may be absent. The heart is flaccid, and the blood black and fluid, though sometimes coagulated; the gastro-intestinal canal offers no trace of inflammation, and when there are signs of

irritation in these parts it is produced by the substances with which the poison was associated. The body remains a long time warm and flexible. It therefore appears that little reliance can be placed on the morbid appearances.

The diseases which may be confounded with poisoning by narcotics, are apoplexy, epilepsy, convulsions, inflammation of the brain, and syncopal asphyxia; the diagnosis of which will be found in the systematic works on Pathology and Practice of Medicine. This important information is also concisely detailed by Dr. Christison, in his work on poisons, to which I refer the reader.

Opium.—Opium is the poison which most claims the attention of the physician and medical jurist, as there is scarcely any other so frequently employed. It is taken by suicides, it is sometimes mixed with porter and other inebriating liquors, and we often observe its poisonous effects as a medicine. After all that has been written on the effects of this medicine upon man and animals, our knowledge is still imperfect as to the phenomena it may produce in individual cases. This arises from peculiarity of habit, or what is technically called idiosyncrasy. in small doses it is said to act as a stimulant, but a single dose produces but a slight and transient effect. But every one knows that small and repeated doses may produce a sedative effect. Neither will the largest dose always act as a sedative. In a case of delirium tremens, I exhibited between laudanum, black drop and tincture of henbane, 960 minims in seventy-eight hours, without inducing the slightest sedative effect. In all painful diseases, a much larger dose than that laid down in books must be administered, and often a stimulating, instead of a sedative effect, will be produced. In tetanus and other spasmodic diseases, we often fail to produce any effect by the largest doses.

The symptoms of poisoning by opium are generally the following :—giddiness, stupor without previous excitement, respiration slow and often stertorous, insensibility to external impressions, power of motion completely lost, eyes closed or half open, pupils contracted, countenance indicative of perfect repose; pulse slow and full, but may be frequent and small. In a short time the countenance becomes ghastly, the pulse

small and imperceptible, and death ensues. If the person recover, he falls into a profound sleep, which may continue twenty-four or thirty-six hours. On awaking he complains of nausea or vomiting. Nothing, however, is more variable than the symptoms attributed by authors to poisoning by opium; even its medicinal effects are undetermined.

The length of time between taking the poison and the commencement of its effects varies. Sometimes the symptoms commence in a few minutes, at other times not sooner than an hour, or even five hours.

The sopor produced can be distinguished from that caused by apoplexy or epilepsy, as the patient can be roused by agitation, loud speaking, tickling the nostrils, &c.; convulsions, though generally present in animals, seldom occur in the human subject. The ordinary duration of a fatal case of poisoning by opium, is from seven to twelve hours—most persons recover, who survive twelve hours; though death may take place long after this period. The quantity of opium capable of causing death is not determined. It varies in different cases. A person has taken eight ounces of crude opium and recovered; and an opium-eater has taken nine ounces of laudanum daily with impunity. The smallest dose which has been recorded as fatal, was half an ounce of laudanum, and four grains of opium, in cases of adults. We almost daily see infants in this city poisoned by opium; but as this arises from the general practice of exhibiting “sleeping draughts” by nurses, and as these are quack nostrums, we can seldom discover the exact quantity that has been given, more especially as the publicans prepare their diacodium, and the druggists their composing cordials of very different degrees of strength.

The external application of opium to ulcers or wounds, or its injection into the rectum, may cause death.

Action of Morphine and Narcotine.—Many jurists maintain that the effects of morphine on man are similar to those of opium; but others deny the validity of this opinion. Its effects in fatal doses are undetermined. A Parisian graduate swallowed twenty-two grains of the acetate, received no assistance for ten hours, when Orfila was called to see him, who, by depletion, sinapisms, ammoniated frictions to the thighs, sti-

mulating clysters, and acidulous drinks, improved him so much, that in six hours he recognized his physician. When morphine is taken into the stomach, it produces the same effects as the acetate, probably from its combination with the acids in the stomach. The same symptoms supervene as when opium is employed. The cerebro-spinal system is chiefly affected. The morbid appearances are so trivial, that no reliance can be placed upon them. Deportes, Bailly, Chevallier, and Flourens state, that there is great congestion of the encephalic apparatus.

Narcotine.—Magendie, Orfila, and Bailly have experimented with this substance, and disagree as to its properties. The last author has given 120 grains daily, without producing any accident. It is said to be a stimulant; but Dr. Whiting has lately related to the Medico-Botanical Society, the results of some experiments he made with this substance on his pupils, and in the dose of two grains, the action of the heart and arteries was not increased. I have not discovered the report of any case of poisoning by this substance. Dr. Christison observes, with respect to the detection of opium, “it may be laid down, therefore, as a general rule, that in poisoning with opium, the medical jurist, by the methods of analysis yet known, will often fail in procuring satisfactory evidence, and sometimes fail to obtain any evidence at all, of the existence of the poison in the contents of the stomach.”

The best test for opium is the following, proposed by Dr. Hare, of Philadelphia, but taught by Dr. Christison before the process was published:—A solution of the acetate of lead is to be added to the suspected fluid in a conical glass vessel, and in from six to twelve hours, a precipitate subsides, which is the meconate of lead. A few drops of sulphuric acid are to be poured through a tube on it. On the addition of a solution of permuriate of iron in the same manner, a cherry coloured meconate of iron appears. Philadelphia Journ. of the Med. and Physical Sciences, v. 77. Christison says the superincumbent fluid, after the precipitate has subsided, should be removed before the application of the sulphuric acid and permuriate of iron; and observes, that this test cannot be applied to deeply coloured fluids, or to complex organic mixtures.

Treatment of Poisoning by Opium.—The poison is to be removed from the stomach as speedily as possible, by the exhibition of $\frac{1}{2}$ a drachm to two scruples of sulphate of zinc, or by the stomach pump. The zinc is the best emetic in these cases. Tartarized antimony is too uncertain. Should the zinc and stomach pump fail, the only other means of evacuating the stomach, is by transfusing a grain of tartar-emetic into a vein in the arm, great care being taken not to introduce air into the vein. This plan is in general successful, though very seldom resorted to. The patient should be roused and kept moving for six or twelve hours, by the unwearied exertions of strong men. After the stomach is evacuated by means of the emetic and pump already described, diluted vegetable acids, coffee and abstraction of blood, whenever there are signs of cerebral congestion, constitute the best remedies.

In a case of narcotism, induced by forty drops of laudanum, which were exhibited for intense pain in the stomach, the lady having long suffered from cerebral congestion; the respiration was slow, the breathing stertorous, the pupils contracted, the pulse rapid and small, the convulsions present for twelve hours; after the zinc had caused vomiting, venesection was employed three times; the pure liquor of ammonia was applied to the face, chest and thighs, sinapisms to the feet and legs, cupping on the temples, a blister to the neck and between the shoulders, lemonade and coffee freely used, and relief obtained in twelve hours from the commencement of the operation of the opium. Dr. Uwins also saw this case with me, and fully concurred in the treatment. The application of strong ammoniated oil to the inside of the thighs, with sinapisms to the feet, restored a child of four years of age, who had been thirteen hours in a state of stupor from opium. In extreme cases, artificial respiration may save life. There is no antidote for opium; our chief effort should be to remove it from the stomach as speedily as possible.

Hyosciamus.—The root of henbane has been mistaken for parsnip, and that of the wild chicory; and has sometimes caused death. The symptoms induced are, giddiness, loss of speech, pallidity of the countenance, excessive dilatation of the pupils, and so profound an insensibility of the retina, that the cornea

may be touched, without the patient perceiving it—delirium and coma supervene and sometimes nausea and vomiting; there are all the signs of cerebral congestion, and death speedily takes place. Orfila says, that the root is inert in spring, but Mr. Wilmer relates six cases of poisoning, one of which proved fatal, by the root gathered in winter.—(*On the Poisonous Vegetables of Great Britain.*) Mr. Houlton, late professor of Botany to the Medico-Botanical Society, has stated that the hyosciamus is only fit for medical purposes in the second year of its duration. M. Runga, of Berlin, has indicated a new means of discovering poisoning by this plant, or by belladonna or stramonium. It is to touch the conjunctiva of a cat with some of the liquid, which contains traces of these vegetables, when dilatation of the pupil will be effected, which cannot be induced by any other substance. (*Sedillot.*) The appearances on dissection are inflammation of the digestive tube, and sanguineous injection of the cerebro-spinal apparatus.

Lactuca virosa.—This plant, with the lettuce opium, is inferior to opium and henbane, and does not cause fatal effects, except in doses of two or more drachms.

Solanum.—The different species of this plant are said to be poisonous, and to resemble hyosciamus in their effects.

Hydrocyanic Acid.—The plants which afford this acid are, bitter-almonds, cherry-laurel, peach-blossoms, and the cluster-cherry. It is the most fatal and powerful poison known. When a few drops of pure hydrocyanic acid are injected into the jugular vein, they cause death with the rapidity of lightning, so that its action must be through the medium of the nerves. When a dose is not sufficient to cause instant death, the respiration becomes slow, convulsions, vomiting, and frequent alvine dejections come on. When the dose is very large, death takes place without convulsions, the patient staggers, and dies in a few seconds. In a case which happened last year, in the borough of Southwark, the man swallowed an ounce of the medicinal acid; he staggered several paces, and walked but a few yards, before he fell and expired. The particulars of this case were detailed in the London Medical Society. It is decided that a large dose causes death in a few seconds, or in a

very few minutes. The morbid appearances after death are equivocal. The tests for this acid are, its peculiar odour in the stomach or blood, the sulphate of copper, the salts of the protoxide of iron, and nitrate of silver. The odour should be perceived by different persons; and, according to Drs. Christison and Turner, the proto-sulphate of iron is a more delicate test than the sulphate of copper. The best mode of treating a case of poisoning by hydrocyanic acid, is the application of cold affusion before or after the convulsions have commenced, and the inhalation of diluted ammonia or chlorine. The liquor ammoniæ should be diluted with twelve times its weight of water. It is always to be recollected that if a large dose, say three or more drachms, of the acid be taken, the effects are so sudden, that no treatment can save the patient.

The essential oils, or distilled waters of the plants named in this article, produce the same effects as prussic acid.

Narcotico-Acid Poisons.—This class of poisons possesses a double action—the one a narcotic, similar to the substances of the preceding classes—the other acrid or irritant, exciting inflammation in the part with which they come in contact; but many of them have very different properties, some exciting tetanic spasms only. Inflammation is not an invariable result. This class is derived from the vegetable kingdom. Their characters are very similar to those of narcotics; but there are some exceptions, as for example, a single dose of some of them may cause narcotism for two or three days, though they seldom prove fatal after twelve hours as narcotics. The poisonous fungi are exceptions, as they may prove fatal as narcotics after the lapse of one, two, or three days. Digitalis has proved fatal as a narcotic, after two or three weeks; and the different species of strychnos have peculiar effects, which cannot be mistaken for the results of disease. The following are the principal species of this class:—colchicum, white hellebore, squill, digitalis, belladonna, stramonium, tobacco, nerium, cœnanthe crocata or hemlock drop-wort, black hellebore, hemlock, monk's hood, strychnos, or nux vomica, St Ignatius' bean, strychnos tieuté, which yields the Indian poison, the upas tieuté, the strychnos pseudo-kina, and S. potatorum, cam-

phor, *coccus Indicus* upas antiar, poisonous mushrooms and fungi, many species of *amanitæ* and *agaricæ*. Orfila divides all these poisons into four groups.

1.—*Meadow Saffron, White Hellebore, Squill, Digitalis, Belladonna, Thorn-Apple, Tobacco, Hemlock Drop-wort, Black Hellebore, and Monk's Hood.*

All the symptoms caused by these vegetables are indicative of irritation in the intestinal canal and cerebro-spinal system, and are continued. After their ingestion into the stomach, we observe nausea and vomiting, numerous alvine dejections, and pain in the abdomen. The patients suffer great agitation, some degree of delirium, convulsive motions of the muscles of the face and limbs, the pupil contracted, the pulse small and irregular, and there are piercing cries. In some there is complete narcotism, the pupil dilated or natural, and insensibility and stupor supervene. The autopsy affords the same characters as produced by the preceding class of poisons.

Colchicum and *Squill* owe their properties to veratrine. The poisonous effects of *colchicum* are often seen in cases of gout and rheumatism. The root is most active in spring.

Digitalis, when pushed too far, or when it accumulates in the system, produces nausea, vomiting, giddiness, want of sleep, sense of heat throughout the body, pulsation in the head, general depression, sometimes diarrhœa, profuse sweating or salivation. In fatal cases convulsions occur. In using this medicine, the gastro-intestinal membrane ought to be healthy, for its poisonous effects produce manifest symptoms of gastro-encephalic irritation. *Belladonna*, or deadly nightshade, produces a train of symptoms that can scarcely be mistaken. No matter to what tissue it may be applied, whether to the skin round the eye, to the stomach, or to the surface of a wound, there is dilatation of the pupil, and if the dose is poisonous, there is a sense of dryness in the throat, delirium and coma. According to M. Barbier, of Amiens, the symptoms are dryness of the throat, thirst, efforts to vomit, cardialgia, colic, eyes haggard, pupils dilated, confused vision, gay delirium, difficulty of remaining standing, sardonic laugh, trismus or lock-jaw, difficult deglutition, continual agitation, convulsions,

subsultus tendinum, rigidity of the back, convulsive motions of the heart, oppression, gangrenous spots on the skin, pulse small and contracted, perspirations, lipothymia or sudden cessation of the heart's action, coldness of the extremities, and death. These symptoms depend more upon the nervous system than on the digestive canal. M. Flourens concludes, from this semeiology, that the tubercula quadrigemina are affected, and become the seat of sanguineous effusion. It is right to mention that the delirium is in some case accompanied with immoderate and uncontrollable laughter, at other times with incessant loquacity, and again with complete loss of voice. The sufferer may follow his ordinary vocation, as happens in somnambulism. The effects of this poison do not disappear as soon as those of opium. In one case the morbid appearances were rapid putrefaction, tumefaction of the abdomen, distention of the penis and scrotum with fœtid serum, softness of the brain and dark vesicles on the skin. In another case there was no unnatural appearance. The best proof of poisoning by this plant, is the detection of berries, husks or seeds in the alvine dejections. The berries are so tempting, that children and adults, very often eat them; and their juice has been mixed with wine.—(See *Adulteration of Aliments*.)

Stramonium or thorn-apple is seldom used in this country as a poison; its effects are delirium, dilated pupil, stupor, and occasionally palsy. The physician should recollect these effects, when his patient has been smoking this plant for asthma. It has been used on the continent of Europe for the purpose of accomplishing female violation, and other atrocious crimes. Ardent spirits and opium are more generally exhibited for these purposes. In cases of poisoning by thorn-apple, there is great cerebral congestion, and hence venesection is necessary.

Tobacco.—Though this plant is almost universally employed as a luxury, either by smoking or snuff taking, it is a very potent poison, when too freely employed. Young smokers are affected with nausea, giddiness, sudden fainting, or disorder of the intellectual faculties, with quivering pulse. These effects are generally transient, but examples are recorded in which these symptoms were followed by stupor, somnolency

and death. The usual symptoms may continue for twenty-four hours, and then gradually disappear. Death has been produced by a clyster, composed of two ounces of tobacco leaves, infused in eight ounces of water. The bad effects may be induced by the application of a leaf to an abraded surface. I have observed this fact in a case of ulcer of the leg, and in cases of excoriated nipples to which an ointment of the leaves was applied. It appears from reports made by several physicians in France, that the men employed in manufacturing of snuff are in good health, and unaffected by their occupation.

Hemlock.—The root of this virulent poison has been often mistaken for parsley, fennel, asparagus, and most frequently for parsnip; the effects on man are similar to those of opium, belladonna, and thorn-apple, but its irritant action is not established. The aquatic hemlock is the most active. Giddiness, coma, and convulsions are the usual symptoms, the pulse may be reduced to thirty, and the recovery similar to that of the opium. The autopsic characters are, congestion in the head, fluidity of the blood, it often escaping at the nose, and much cadaverous lividity. Examples are detailed, which arose from persons mistaking the root for parsnip, and using the leaves with other herbs in making broths.

Enanthe Crocata.—Hemlock drop-wort, is often mistaken for common hemlock by herbalists, which is a matter of serious consequence, as a dose of the extract prepared from it may prove fatal. The bad symptoms induced by it, are heat in the throat and stomach, delirium, stupor, hardly ever proper coma, but generally convulsions, and death may take place from one to three hours. The root is often mistaken for water parsnip. Others affirm that its effects are little different from those of belladonna.

Æthusa cynapium, or fool's parsley, has been mistaken for common parsley, and has been mixed up in sallad, when it produced nausea, vomiting, head-ache, giddiness, somnolency, pungent heat in the mouth, throat, and stomach, difficulty in swallowing, and numbness of the limbs.

Aconitum napellus, or monk's head, is seldom used as a poison. The leaves are less poisonous than the root, and the resinous is more active than the watery extract. In some

cases narcotism, and in others the characteristic effects of pure acrids are observed. Fatal effects have been caused in France by the spirituous infusion or tincture of the root, as will be seen in Christison's work on Poisons.

Helleborus niger, or black hellebore, was considered by the ancients as a specific for mental alienations. It is a violent narcotico-acrid poison. The symptoms are nausea, vomiting, the circulation is arrested, the respiration constrained, the tongue is protruded and pendant from the mouth, vertigo and trembling seize the animal, which tumbles on its side and expires with tetanic convulsions, with opisthotonos or emprostotonos.

The morbid appearances are inflammation in the digestive canal, especially in the large intestines, the lungs are gorged with blood, are hepatised and red.

2. *St. Ignatius' Bean, Nux Vomica, Upas Tieuté, Strychnine, and False Angustura.*

St. Ignatius' bean is a species of strychnos, and contains three times as much strychnine as *nux vomica*, according to Pelletier and Caventou. The powder of half a bean, which is about the size of an olive, was taken in brandy, and induced tetanus of several hours duration.

Upas tieute is a species of strychnos, and is supposed to be the most active of the Japanese poisons. It is nearly as powerful as strychnia.

Nux vomica is another species of this genus, and causes death by prolonged spasms of the thoracic muscles of respiration. These muscles may be felt during the fits as hard as bone. These spasmodic fits extend to the whole muscles of the body, and death may occur in the space of one hour, or the person may be affected for twelve hours with milder spasms. The smallest dose which is said to have yet proved fatal, is three grains. The muscles remain rigid in some cases for five hours after death. This state of rigidity does not invariably occur. When the patient is not attacked with spasms for two hours, he is generally safe. Half a drachm of the powder may cause death. I have been lately asked by a wholesale and retail druggist, could half an ounce of *nux*

vomica cause death, as he had sold that quantity to a female, who swallowed it, and died with the symptoms already described. When the powder is taken, we should use the stomach pump, or in its absence emetics, and always recollect that the poison adheres with great obstinacy to the coats of the stomach. The sudden appearance of the spasms enables us to distinguish them from ordinary tetanus, which in general comes on slowly, and is preceded by some symptoms of constitutional derangement. The spasms from nux vomica come on within an hour, or even less. Poisoning by this substance, unless when given in the form of strychnine, is comparatively rare.

Strychnine is the active principle of the preceding poison. It is nearly as powerful a poison as hydrocyanic acid. A sixth of a grain in an alcoholic solution injected into the chest of a dog, has proved fatal in two minutes. (Christison.) In fifteen seconds it begins to act, the animal trembles, and is next seized with stiffness of the limbs. General spasm soon intervenes, the head is bent back, the spine stiffens, the limbs are extended and rigid, and the respiration is constrained by the fixing of the chest. The fit is succeeded by a calm, during which the senses are perfect, several fits take place, and the animal is destroyed by suffocation.

Brucea, or false angustura bark, produces the same symptoms as nux vomica.

3. *Camphor, Cocculus Indicus, its Alkali (Picrotoxine,) and Upas Antiar.*

Camphor.—Two scruples of this medicine taken into the stomach in a dose, produced langour, giddiness, confusion, and forgetfulness, in the short space of twenty minutes. Loss of consciousness, convulsions and maniacal frenzy supervened, which were removed by an emetic, which caused the rejection of the drug, though taken three hours previously. In another case, half a drachm was used as a clyster, which was soon followed by indescribable uneasiness. The patient experienced a sensation as if his body was lighter than usual—he staggered, became pale and chilly, and felt a numbness of the scalp. On taking a glass of wine he became better,

and for twenty-four hours his breath exhaled a camphorous odour. My friend, Mr. Mathews, of Hunter-street, consulted me in a case in which there was a sense of numbness in the scalp from the use of this medicine, which always occurred whenever the remedy was exhibited. A man had taken one hundred and sixty grains, and recovered without an emetic. The Italian physicians are of opinion that camphor acts specially on the genito-urinary organs, induces erection of the penis, voluptuous reveries, and a sense of heat in the urethra, during the passage of the urine. That, vertigo, vivid impression on the eye, head-ache, acceleration of the circulation, and excitation of the genito-urinary organs, announce its action on the brain, cerebellum, and great sympathetic, and that its action is increased by alcohol, and diminished by nitre.—(Annali Universali de Med. Juin. 1829.) The morbid appearances are injection of membranes of the brain, inflammation of the stomach and intestinal tube, of the ureters, urethra and spermatic cords; and every organ in the body exhaling a strong camphorous odour.

Cocculus indicus is sometimes used by brewers, to economise hops, contrary to the laws of this country. It is seldom dangerous in the proportion used in manufacturing fermented liquors. It causes vertigo, pallidity of countenance, and tetanic spasms. It contains an alkaloid named picrotoxine.

Upas antiar is a Javanese poison, which is often mistaken for the upas tieuté. It acts like camphor and cocculus indicus. M. Andral states that it induces clonic convulsions with relaxations, an inflammation of the stomach if injected into the veins; phenomena which are not observable from upas tieuté.—(See *Adulteration of Aliments*.)

4. *The fourth group of narcotico-acrid Poisons includes the poisonous Mushrooms or Fungi.*

Of these the most deleterious are—*amanita muscaria*, *alba*, *citrina* and *viridis*; the *hypophyllum maculatum*, *aldum-citrinum*, *tricuspidatum*, *sanguineum*, *crux melitense*, *pudibundum* and *pellitum*; the *agaricus urens*, *necator*, *pyrogalus*, *stypticus*, *annularus* and *semiglobatus*. Such is the number mentioned by Orfila and Christison. Dr. Greville, of Edinburg, describes

twenty-six species of eatable mushrooms, but few of them are used. Richard informs us, that as a general rule, we should reject those whose taste and smell are disagreeable, those that grow in shady and moist places, and those whose taste is bitter and astringent. Poisonous fungi produce narcotico-acrid effects: sometimes they cause narcotism alone, and sometimes irritation, but most commonly both. The symptoms and morbid appearances have not been fully detailed. The sufferer complains in a few hours after his repast on these substances, of nausea, heat in the abdomen, and severe continued pain. Frequent vomiting and purging supervene, there is insatiable thirst, the pulse small, hard and frequent. After some time, general or partial convulsions come on, cold perspiration, drowsiness, though the consciousness remains perfect in general to the time of death.

On the autopsy, numerous spots, of a violet colour, are observed on the skin, the abdomen distended, the stomach and intestines in many places gangrenous, and affording marks of the most intense inflammation, the intestinal tube is very much contracted, the other viscera congested, presenting points of inflammation, the membranes of the brain, the pleura, the lungs and uterus are disorganized.

Secale cornutum, or spurred rye, when mixed with flour in large quantities, has caused violent spasmodic convulsions, and in others dry gangrene; but these effects do not occur at the same time, in the same individual. Two drachms taken at once have caused giddiness, head-ache, flushed face, pain and spasm of the stomach, nausea, vomiting, colic, purging, weariness and weight of the limbs. The French writers divide the effects of this substance into convulsive and gangrenous ergotism; in the latter the feet, hands, nose and ears are affected. It is now admitted by all scientific obstetricians, that the ergot possesses the power of exciting uterine contraction, and of accelerating labour. In my work on Midwifery I have given a full account of the circumstances under which it is useful. I am as satisfied of its power, as I am of that of any medicine in use. It must be properly preserved, or it becomes inert; and inattention to this fact accounts for its repeated failures. I find one drachm sufficient

in any case, and this should be given in three doses, either in decoction, infusion, or powder. We should not exceed a drachm and a half, under any circumstances.

5. *The last group of narcotico-acrid Poisons includes Alcohol and Ether.*

The inebriating effects of these alcoholic liquors are so well known, as to require no elucidation. After death the brain will be found congested.

Septic, or Putrefiant Poisons.—Under this head are included cantharides, poisonous fish, venomous serpents, decayed and diseased animal matter.

Cantharides, Blistering Fly.—This substance exerts a special influence on the genito-urinary organs. In large doses it may produce priapism, and excite the venereal appetite, though in some instances it affects the kidneys and the bladder, induces strangury, and no sexual appetite. In some cases it produces no effect on the urinary organs; and whenever it does, such violent constitutional symptoms arise as endanger life. When swallowed in large doses it causes irritation and inflammation, along the gullet, stomach, and intestinal tube, and generally in the genito-urinary organs. The quantity of the powder or tincture which may prove fatal, is not accurately determined. The treatment should consist in emetics, demulcent and oily injections into the bladder, if that organ is affected, and antiphlogistic measures when indicated.

Poisonous Fish.—From idiosyncrasy, or peculiarity of constitution, several of the fishes are poisonous to certain individuals: as oysters, crabs, lobsters, mackerel, muscles, eels, salmon, &c. The symptoms are indicative of local or nervous irritation. In some persons there is an eruption like nettlerash, in others coma or peculiar paralysis. In some there are epileptic convulsions and irritation of the stomach. The poisonous qualities of fishes are not determined.

Venomous snakes and insects inflict fatal injury on the human system, but such cases can seldom require attention from the medical jurist; they need no further notice in a condensed work of this kind.

Poisoning by decayed or diseased Animal Matter.—Under this head the medical jurist should consider the diseases caused by infection, contagion, and inoculation, but these subjects are excluded from toxicology, as they belong to state medicine. The flesh of certain animals is sometimes poisonous, as the partridge at certain seasons; even honey is sometimes poisonous; and the danger arising from dissection wounds is too well known to require notice in this place. The adulteration of the different kinds of food claim the attention of medical men, and are to be learned from the succeeding chapter, where I shall give an account of the adulteration of aliments, of milk, of bacon, wine, brandy, vinegar, bread, &c.

General Precepts with respect to medico-legal Researches on Poisoning.—The first axiom laid down by the best jurists is, that we cannot affirm that poisoning has taken place unless we can demonstrate the poison. The questions are, 1st, has poisoning taken place? 2nd, what is the poison? When we answer the first question, the second presents itself as a natural consequence.

The greatest caution is required in giving evidence upon these points, as innocent persons have been executed, and the guilty have escaped, by the conclusions of medical men. We should remember that many diseases simulate poisoning, as cholera, spontaneous perforation of the stomach, ileus, strangulated hernia, and hæmatemesis.

In making the autopsy or post mortem examination, as it is absurdly denominated in this country, we should apply a ligature on the gullet, and another on the rectum, besides one on each orifice of the stomach, so that in removing the whole digestive tube, its contents may be obtained; great care will be requisite in removing the parts, lest incisions or perforations should be made. The contents of the digestive tube should be placed in a glass or porcelain vessel; after carefully noting both the external and internal appearances. We have next to apply the chemical and physical tests, the latter afforded by physiology, pathology, and experiments on living animals. Many of the vegetable poisons may be detected by their physical properties, and we should refer to the special

history of those which are most commonly employed by persons in the rank of life of the accused party, or the deceased. Our tests should be of the purest and best description, and we should begin our experiments upon small quantities of the suspected matter, reiterate them and vary them, so as to justify our conclusions, in the most satisfactory manner. We should preserve the results of each experiment, in order to procure the quantity of poison, however small that may be, in each portion of the matter examined. We should never communicate our opinion to the magistrate or other persons unless given in evidence, more especially if it is unfavourable to the accused.

In all cases of poisoning, we should endeavour to discover whether the act is one of suicide or homicide. The age of the deceased, his state of health and intelligence, will assist us in arriving at a safe conclusion. Moral evidence will often afford us assistance, and when the prisoner had been dabbling with the poisons, conversing about them, though not conversant with them by profession; when he has purchased poison shortly before the death has taken place, and under false pretences for poisoning rats, for which purpose he has not applied it; when his conduct has been suspicious during the illness of the deceased, such as preventing medical aid being procured, not leaving the patient, attempting to remove or destroy articles of food or drink, or vomited matter; expressing a presentiment of the patient's speedy death; hastening the funeral, opposing the examination of the body, giving a false account of the illness, having quarrelled with deceased, or acquired property by his death, or relieved from his support, or his knowing that the deceased was pregnant by him. We must collect phials, pill-boxes and papers, which are found in the apartment of the deceased. The symptoms in every case are to be ascertained, the indications from the autopsy, the chemical analysis, and the physical properties afforded, are to be duly considered, as also the diseases which simulate the effects of the supposed poison; such are the leading points which deserve the greatest attention from the medical jurist in his investigation of cases of poisoning.

I cannot conclude this article without formally acknowledging the important information I have derived from the works

of Professors Orfila and Christison, as well as from those of the other able medical jurists, whose names are mentioned in the preceding pages.

[No part of Medical jurisprudence has attracted more attention, than that relating to the poisons; until the time of Orfila, however, it was a vast chaos of confusion and conjecture; but the labours of that learned and indefatigable toxicologist, introduced a degree of certainty in the investigations necessary for the detection of this class of agents, which has rendered this branch of our duties of the greatest value.

He has been most ably followed by numbers of writers and experimenters, among whom the name of Christison stands pre-eminent. In fact we are acquainted with no work on this difficult subject, which will more amply reward the diligent student, than the treatise on poisons by the last mentioned professor. It will be perceived that Dr. Ryan has felt the value of this treatise so strongly, that his chapter on poisons with very few exceptions, is merely a condensation of it. As, however, he has omitted many points, of no slight consequence to the jurist, we have endeavoured to lay them before our readers, in as concise a form as is compatible with their importance; and have added some additional information, which has been promulgated since the publication of our text; in doing this we shall follow Dr. Ryan's example, and freely avail ourselves of the labours of Christison, &c. To avoid confusion, we shall follow the order in which the different articles are treated on by our author. There is however one subject connected with the investigation of poisons, which he has not touched upon, which we think deserves notice, we allude to the evidence by which the medical jurist is enabled to pronounce on the existence or non-existence of poisoning in general; this evidence is to be deduced from: 1, the symptoms during life, 2, the appearances presented by the dead body; 3, the chemical analysis; 4, experiments and observations on animals; 5, certain moral circumstances.

Evidence from symptoms, was until within a few years, the general mode of determining questions of this nature. But at the present day it is considered by every esteemed author, that symptoms should never be considered as more than col-

lateral or corroborative proofs. This however must be understood as applying generally, and is liable to many exceptions.

The chief characteristics ascribed to the symptoms of poisoning generally, are, the suddenness of their appearance, the rapidity of their progress, their steady increase, their uniform nature throughout their course, their beginning soon after a meal, and their appearance while the body is in a state of perfect health. Some poisons act almost instantaneously, and the effects of the generality of them are fully developed within an hour or two; but this character is not uniform, as even the most violent may be so administered as to induce their peculiar symptoms by almost imperceptible degrees; thus arsenic, which when given in a full dose will cause violent symptoms almost immediately, may be so managed as to occasion nothing more than slight nausea and general feebleness, and afterwards in slow succession, its more customary effects. The same holds good with many of the vegetable poisons, as for instance the digitalis. But it still remains true, that in most cases the effects of poison begin suddenly, and when we consider that in criminal cases, they are almost always given in large quantities, it follows, that if the effects ascribed to these poisons have not begun suddenly, the suspicion is probably incorrect. The same remarks may be applied to the sudden termination of the symptoms. To this, the same exceptions are however to be considered, as were spoken of under the last head. This perhaps would be the proper place to mention the important question as to the interval of time, after which if death supervenes, it cannot be laid to the charge of the person who administered the poison. It is unnecessary however, to say much upon this subject. According to the English law, death must take place within a year and a day, this also holds good in the United States. The penal code of France, enacts "*si la mort s'en est suivie dans les quarante jours, le coupable sera puni de mort.*" The question for the medical jurist to determine in such cases, would be the distance of time to which death may be delayed in general cases, and in that of the particular poison. This cannot be answered even with an approach to precision, except perhaps in the case

of a few common poisons. Most of the vegetable and animal poisons prove fatal in a few days or not at all; but it appears probable that some of the mineral, as arsenic for instance, may cause death after a lapse of several months.

The next point, is the regularity in the increase of the symptoms. This is by no means universal, thus in cases of slow poisoning, there will be remissions and exacerbations, as in natural diseases. Besides some poisons admit of these even when given in a large dose, as for instance, strychnine and all plants containing it, whose essential character, is the production of paroxysms. Arsenic also, after producing violent agonies for some hours, will suddenly appear to lose some of its power, and again manifest its virulence with increased energy.

Uniformity in the nature of the symptoms, is less to be depended on than any of the others, as most poisons produce a different set of phenomena towards the close of their action, than those which they occasioned at the commencement. Thus, arsenic may first induce inflammation of the alimentary canal, and afterwards palsy or epilepsy; nux vomica, tetanus, and then inflammation of the stomach and bowels. In fact certain changes of this kind in the nature of the symptoms are a strong presumptive proof not only of general poisoning, but also of the particular article employed.

Symptoms appearing soon after a meal, or rather soon after the ingestion of food, drink or medicine. This can only apply to the commoner poisons, as arsenic, corrosive sublimate, oxalic acid, and the like. In making enquiries on this point, it should be borne in mind, that poisons may be administered in many other modes besides by mixing them with food or medicine.

Symptoms appearing during a state of perfect health. This is an important, but not a universal character, as it does not apply to slow poisoning, or to cases where poisons are administered while a person is actually labouring under disease.

It now remains to see how far these characteristics distinguish the symptoms of poisoning from those of natural disease. We will again go through them in detail. Suddenness of their invasion and rapidity of their progress. It need scarcely be

observed that many natural diseases commence with a suddenness, and run as rapid a course as any produced by the most violent poison. Thus cholera, may be fully developed within an hour after its first warning symptom, and may prove fatal in a very short time. Inflammation of the intestines may begin, or appear to begin suddenly, and come to a fatal termination in twenty-four hours, particularly a variety of it mentioned by Louis and Abercrombie; where it remains latent till the gut is perforated by ulceration, and then the patient is attacked with acute pain, vomiting, mortal faintness, and frequently dies within a day. Organic diseases of the heart, apoplexy, the ingestion of cold water, exhaustion from heat or over fatigue, will also prove suddenly fatal without any previous warning. Hence the full characteristic as applied to the symptoms of poisoning generally, contrasted with those of general disease, is not distinctive, though it is sometimes a good diagnostic when applied to particular poisons.

The next or the uniformity and uninterrupted increase of the symptoms, is equally an attribute of natural diseases, especially where they are rapid in their progress.

The third, or uniformity in kind throughout their progress, has already been said to be by no means an invariable concomitant, and it is still less a distinctive character, for many diseases are marked by a great uniformity of symptoms.

The fourth, or symptoms appearing soon after a meal, also occurs in many disorders. An attack of apoplexy after a hearty meal is a common occurrence. Cholera induced by the too free use of fruit, also comes on soon after eating. At the same time as these diseases are well known, it is justly reckoned a suspicious circumstance, and when combined with certain points of moral proof, such as that of several persons who have eaten or drank together, being seized about the same time, the evidence becomes very strong. Sometimes the evidence from the date of their commencement after a meal may of itself be conclusive, as in the case of the mineral acids, &c. which begin to act in a few seconds or minutes.—On the other hand, if the symptoms do not begin soon after food, drink or medicine has been taken, the presumption on the whole is against poisoning.—This is important, for when united to some

knowledge of the symptoms antecedent to death, it may be sufficient to decide the nature of the case.

Little need be said as regards the symptoms beginning while the body is in a state of perfect health, as most acute diseases commence under the same circumstances.—On considering therefore what has been said respecting the characteristics of the symptoms of general poisoning, as contrasted with those of natural disease, no one can hesitate to allow, that from them alone, a medical jurist ought never to pronounce that poisoning was certain. At the same time he must not neglect them, as besides giving him a clue to further investigations, and enabling him to decide whether poisoning was possible or probable, they will be necessary to him in determining, if it was given, whether it was the cause of death. This last clause is of no slight consequence, and has been strangely overlooked by most writers on medical jurisprudence. It does not necessarily follow, because a poison has been given, that it is the cause of death, and therefore in making our enquiries, the cause of the first symptoms, and that of death, should be made the subject of distinct investigations.—The question whether a poison proved to have been administered, was the cause of death, is to be answered by attending to the second and third characteristics already mentioned, and considering whether the symptoms went on progressively increasing, or altered their nature during the course of the patient's illness, and whether the alteration if any, was such as may occur in the case of poisoning generally, or of the special poison given.

Evidence from morbid appearances. The appearances on dissection were formerly, and are still relied on by some practitioners far more than the symptoms during life, as indicative of the ingestion of poison. This is highly erroneous, for, except in the case of a very few poisons, the morbid appearances alone, can seldom distinguish death from poisons, from the effects of natural disease, or even from other kinds of violent death. But as this is a part of the subject to which no inconsiderable time is always devoted in a judicial examination, it will be advantageous to examine it in detail. It was at one time thought by the profession and is still very generally

imagined, that unusual blackness or lividity of the skin, usually indicates death by poison. That it does often take place from this cause, there can be no doubt. But every physician is, or at least ought to be aware, that excessive lividity is not universally produced by poison, and likewise that it is caused by so many natural diseases as not even to form under any circumstances, a ground for suspicion. Neither does there appear to be any difference as has been supposed, between the appearance of the lividity, succeeding death by poison, and that which follows natural death. At the same time as it is vulgarly supposed to be an infallible sign, it should not be overlooked, as it may lead to such conduct or language on the part of the accused, as to afford strong presumptive evidence. There is another appearance, which is also popularly considered as the universal and never failing consequence of poisoning. This is, a rapid decomposition of the body; to appreciate, however the true value of such an indication, and to avoid the fallacies with which it is surrounded, it is essential to remember that the body of a person dying suddenly, and in what may be termed full health, is very apt to run rapidly into a state of decomposition. It is by no means invariably caused by poisons, nay, sometimes a state precisely the reverse appears to be induced. The fact of accelerated or retarded putrefaction therefore, cannot be received with any confidence as a collateral indication of poisoning.

But at the same time, although appearances after death considered alone, can rarely supply evidence of poisoning, they may nevertheless be collaterally important. Thus, in connexion with the symptoms and the general evidence, they may be almost decisive. Again, in cases of alledged poisoning, they are necessary to determine whether a poison actually found in the body was introduced during life or after death. Further, a few poisons occasionally produce appearances so characteristic, as not to be capable of being confounded with the effects of any other agent whatsoever.

Evidence from Chemical analysis.—Chemical evidence in charges of poisoning is generally, and properly considered, as the most decisive of all the branches of proof, and is the most valid, when it detects the poison in the stomach, intestines or

oesophagus; then in the matter vomited, next in articles of food, drink, or medicine, of which the sufferer has partaken; and lastly, in any articles found in the prisoner's possession, and for which he cannot satisfactorily account. When poison is detected in the former of these quarters, it is seldom that any farther proof is needed to establish the fact of poisoning, at the same time there are cases where some corroboration is necessary.

In cases of poisoning and more particularly with mineral poisons, some authors state that it is necessary the deleterious substance should be found, and that the inability of the examiner to substantiate its presence, should negative the charge. Such an inference however is by no means correct, for the poison may have been absorbed or eliminated during life, or it may have undergone chemical changes, or entered into combinations by which its characters are masked or wholly destroyed.

It may have been absorbed. It has several times happened that in the bodies of those poisoned by laudanum or even solid opium, that no trace of the drug was perceptible after death, either by smell or otherwise. Dr. Bostock has shown in the instance of corrosive sublimate, that an animal may be suddenly killed by receiving a metallic poison in the stomach, and yet that the most delicate re-agents may not be able to detect any portion of such poison after death, in the contents of that viscus.

It may have been discharged by vomiting or purging.—Thus, on the trial of George Thorn, for poisoning several persons in 1821, it was clearly proved that the deceased had died of poisoning by arsenic, yet a careful analysis detected none in the stomach or its contents, for the man lived several days, during which time he vomited incessantly. Dr. Henry, in a letter to Dr. Duncan, communicates the case of Hannah Tomlinson, who died under the care of Dr. Holme, on the sixth day after the ingestion of an ounce of corrosive sublimate; the fluid ejected from the stomach was examined only twelve hours afterwards by Drs. Henry and Roget, yet not the slightest trace of the poison could be detected; and in the work of Paris and Tonblanque, will be found a most interesting case

of the same nature, which is too long for our present purpose. We have also had a case in this country, recorded in the *New York Med. & Philo. Jour.*, of a grocer, who died eight hours after swallowing an ounce of arsenic, and yet in whose body none could be detected by chemical analysis. At the same time, vomiting is often very ineffectual in expelling poisons from the stomach, especially arsenic. Metzger relates a case, where after six hours of incessant vomiting, three drachms were found in the stomach; and Orfila gives many cases where it has been found in the stomach after constant vomiting for some days.

Lastly, poisons may not be found because the excess has been decomposed; this is particularly the case with vegetable and animal substances. Some mineral poisons, such as corrosive sublimate, lunar caustic, &c. are also decomposed in the stomach, that is chemically decomposed, not destroyed by the action of vitality, as the basis of the poison may be found in the contents of the stomach under some compound form. Others again may escape detection by altering their form, or combining with other substances, without themselves undergoing decomposition. It may also be right to mention another kind of decomposition which may render it impossible to detect a poison that has been swallowed, viz. that arising from putrefaction.

The next point is, what degree of information can be derived from administering the contents of the stomach of a person supposed to have been poisoned, to dogs and other animals. It has been immemorially and universally believed, that no proof of poisoning is more satisfactory than that furnished by the effects produced upon dogs, by their swallowing the contents of the stomach of persons who are supposed to have died from poison; but this test is much more equivocal than is imagined. But at the same time it should not be wholly neglected, as is advised by some writers on Medical Jurisprudence, and hence it requires notice. The matter subjected to trial may be either suspected food, drink or medicine, or the matters vomited during life, or lastly, those found in the stomach after death. Of these, the evidence derived from the effects of the first is better than that from the two latter.

But an important objection has been made, that what is poison to man is not always so to the lower animals, and vice versa. But from the innumerable experiments of Orfila it appears that the cat and dog, and especially the latter, are affected by almost all poisons in a similar manner to man. In general however poisons act less violently on these animals, thus two drachms of opium are required to kill a common sized dog, whilst a much less quantity will destroy a man. Alcohol, however, acts more powerfully on them than on the human race. The objection is more justly made as regards other species of animals. Both reasoning and experiment, demonstrate, that some orders even of the perfect animals, as the Ruminantia, are much less sensible than man to the action of poisons, particularly those of the vegetable kingdom. Other reasons also exist from functional differences, thus irritating poisons will not cause vomiting in horses and rabbits, as these animals cannot thus discharge the contents of their stomach, neither do they appear to cause much pain in the latter, as they have not the faculty of expressing pain with energy. These exceptions it is true are fewer and less striking than is imagined by many. For it has been ascertained that many of the most active poisons, produce nearly the same effects on all animals whatever, from the highest to the lowest scale of perfection. Thus arsenic, copper, mercury, the mineral acids, cyanogen gas, opium, strychnine, sulphuretted hydrogen, &c. produce nearly the same effects on man, quadrupeds, birds, and even fish and insects. Thus in the case of Mary Bateman, given in celebrated trials, who after cheating a poor family for years, at last tried to escape detection by poisoning them; it was accounted good evidence that a portion of the poisoned food, caused violent vomiting in a cat, killed three fowls, and proved fatal in four days, causing inflammation of the stomach. It has also been objected to experiments on animals, with suspected articles of food, &c. that it is difficult to administer it to them. Orfila in his work on poisons, instituted a series of experiments upon this subject, from which he was led to conclude, 1, That the experimenter should never attempt by force to

make an animal swallow the suspected substance, nor should it be put in his food, for by such a procedure he would not only run the hazard of losing the greater part of it, because the animal would reject it, but the food with which it is combined might exert some chemical action upon it, or so envelope it, as to protect the coats of the stomach from its contact, besides which, six times in ten a part would flow through the larynx into the trachea, and the animal die of asphyxia. 2, the best method that can be employed, consists in detaching the œsophagus, perforating it with a small hole, introducing a glass funnel and pouring the liquid into the stomach, after which the œsophagus is to be tied below the opening. The obvious objection to this mode of administration is anticipated by this laborious experimenter, with much ingenuity. It may be asserted says he, that the animal perished from the operation of tying the œsophagus and not from the action of the poison thus introduced into the stomach, but such an objection has no foundation in truth, for either the suspected substance is in quantity sufficient to destroy the animal, or it is not; in the first case death will take place in forty-eight hours, and will be preceded by symptoms more or less severe; a phenomenon never observed in a simple ligature of the œsophagus, in the second case, the experiment will not be more conclusive than if the œsophagus had not been tied. Another mode has been devised by M. Veniere for the detection of poisons that enter the blood. This is from the extreme susceptibility of the leech. He states, that from experiments it has been proved that the leech when placed in the blood of dogs killed by nux vomica is affected, where the quantity of the poison is exceedingly small. Those who wish for further information on this point, will find it in the *Journal des Progres* for 1827. p. 124. But it is at best but problematical, as it is well known that the leech will suffer from a variety of causes, among the rest, from some diseased states of the body.

As regards matters vomited, or the contents of the stomach, there are many objections to experiments on animals. In the first place, the poison may have been partially or wholly discharged beforehand, or absorbed, or decomposed; secondly, though absolutely present, it may be so diluted as

to have no effect on animals; and lastly, morbid fluids may be secreted during disease, which may be deleterious to them.—The last objection is an important one, though it has been much exaggerated. Morgagni relates a very remarkable instance in illustration of this fact. A child having died of fever was opened, when a quantity of green bile was found in the stomach, which acted on the scalpel; having dipped the end of the knife in this fluid, two pigeons were wounded with it, and they soon died in convulsions. It was then mixed with bread and given to a fowl, which also died. The repeated and fatal consequences of wounds in dissection, together with the experiments of Magendie, leave no doubt, but that animal fluids are capable under certain circumstances, of producing poisonous effects when introduced into an external wound; and it is probable that they might act as irritants on the stomach. On the whole, it appears that in the present state of our knowledge, experiments or accidental observations on the effects of the contents of the stomach, or matter of vomiting, on animals, are extremely equivocal in their import. With regard to articles of food, drink, or medicine, they afford a better proof, though even this should always be regarded as collateral. It ought to be borne in mind, that the law expects the professional witness should be prepared to state that every experiment calculated to detect the presence of poison, has been scrupulously and faithfully performed; and the circumstance of advanced putrefaction, ought never in the present state of our knowledge, be admitted as a satisfactory plea for not having proceeded to an anatomical investigation, as preliminary to chemical enquiry; and as to the danger of such dissections, as is justly observed by Dr. Gordon Smith, “much is placed to this account which belongs merely to disgust.”

The last point is that of *moral evidence*. This is of no slight importance to the medical man, although he has for the most part, nothing to do with the moral proofs, but at the same time in cases of poisoning they are so mingled with the medical, that it is necessary to specify such particulars, as either require some medical skill to appreciate, or fall naturally under the cognizance of the physician in his quality of practitioner. Few writers on medical jurisprudence have noticed this

subject at all. Beck dismisses it with a few, but forcible observations. Christison has however devoted considerable space to its discussion, of which we have freely availed ourselves.

It is evident that the moral proof in charges of poisoning is almost always circumstantial, and consists, 1st, of suspicious conduct on the part of the prisoner before the event, such as experimenting with poisons, when he has nothing to do with them in the way of his profession, conversing about them, or otherwise showing a knowledge of their properties not usual in his sphere of life. 2. To the purchase or possession of poison a short time before the date of the alledged crime, and the procuring it under false pretences, such as for poisoning rats, when there are none on his premises to poison, or for purposes to which it is never applied. 3d, To the administration of poison either in food, drink, medicine or otherwise.— 4th, To the intent of the prisoner, such as the impossibility of his having administered the poison ignorantly, or by accident, or for beneficial purposes, alledged or not alledged. 5th, To the fact, of other members of the family besides the deceased having been similarly and simultaneously affected. 6th, To suspicious conduct on the part of the prisoner during the illness of the person poisoned, such as directly or indirectly preventing medical advice being procured, or the relations of the dying man being sent for, or showing an over anxiety not to leave him alone with any other person, or attempting to remove or destroy articles of food or drink, or vomited matter which may have contained the poison, or expressing a foreknowledge of probability of speedy death. 7th, To suspicious conduct after the person's death, such as hastening the funeral, preventing or impeding the inspection of the body, giving a false account of the previous illness, shewing an acquaintance with the real or supposed effects of poison on the dead body. 8th, To the personal circumstances and state of mind of the deceased, his death bed declaration, and other particulars, especially such as tend to prove the improbability or impossibility of suicide. 9th, To the existence of a motive or inducement on the part of the prisoner, such as his having a personal quarrel with the deceased, or a hatred of him, his succeeding to property by his death, or being relieved of a

burden by it--his knowing the deceased was with child by him. This list may appear long, but all these, and many other circumstances, have had important bearings on trials for poisoning, and it will be perceived that upon many of the particulars, important evidence may be derived from the medical part of the investigation, and indeed, not unfrequently, such evidence can be collected or appreciated only by means of a medico-legal inquiry.

Irritant Poisons. The rapidity with which the symptoms detailed in the text run their course, depends on the solubility of the article and the quantity swallowed. If it is not very soluble, and in small quantity, the symptoms may exist for a long time before a fatal result takes place. But in other cases, death ensues almost instantaneously; thus a girl, to destroy herself, took half a tumbler of arsenic, mixed with water, to the consistence of cream, and she expired as suddenly as if struck by lightning.

Of all the diseases enumerated by Dr. Ryan, the symptoms of which are likely to be confounded with those of the irritant poisons, the most important is cholera; and the medical jurist should always be able to distinguish between the phenomena induced by these different causes, as the existence of this disease is a constant ground of defence in accusations of poisoning. In cholera, there is the same burning pain in the stomach and bowels, the same incessant vomiting and purging, the same tension and tenderness of the abdomen, the same sense of acridity in the throat and irritation at the anus, the same depression and anxiety, and the same state of pulse as are caused by the ingestion of the irritant poisons. The difference pointed out in the text, of the feeling of acridity preceding the vomiting, in cases of poisoning, and succeeding it in cholera, should always be borne in mind. There are also some other points of dissimilarity which should be attended to; there is seldom a vomiting of blood in cholera; this disease seldom proves fatal as rapidly as the irritant poisons, though not much reliance is to be placed on this, as a distinguishing character, as cholera in this country will oftentimes be as sudden and violent in its symptoms, and terminate as speedily as cases produced by the ingestion of the irritant poisons. We

must therefore pay attention to the season of the year and the appearances on dissection. Orfila states, that inflammation never extends throughout the whole alimentary canal in cholera.

Corrosive Sublimate. In the London Medical Gazette, (Aug. 1831,) Dr. Venables gives the following plan for the detection of this poison in the solid substance of the viscera. He thinks, in cases where we cannot detect it in the fluids, that we may be successful by examining the coats of the stomach, and has proved that the method he proposes, is sufficiently delicate to detect the one sixteenth of a grain, when combined with the whole substance of the stomach and duodenum. The stomach and duodenum cut into small pieces, are to be put into a Florence flask, and nitric acid in a considerable excess added, and after being frequently agitated, allowed to exert its action for several hours. A stream of chlorine gas is now to be passed through it, and the whole well boiled, so that the animal matter might be destroyed by the boiling nitric acid. After this it is to be strained through a coarse cloth, and then filtered. The clear liquid is to be evaporated, a solution of chlorine being added as often as the fluid becomes thick or sensibly coloured. The evaporation is to be continued, till the fluid ceases to affect litmus paper sensibly. It is now to be evaporated till it is very concentrated, a little distilled water added; re-boiled, and transferred to a large test glass or jar. If on trial, there appears an excess of acid, caustic potass is added to neutralise it. On the addition of proto-chloride of tin, if any mercury be present, a slate grey precipitate will gradually be formed, which is to be collected on a filter, well washed in distilled water, and transferred to a watch glass; this powder will now be of a very black colour. When dried, innumerable globules of mercury are discernable with a microscope. On subliming, however, in a glass tube, the mercury becomes more visible, and may be united in a single globule.

Arsenic. In the same work for Sept. 1831, Dr. Venables has also proposed an improvement on Dr. Christison's process, for the detection and identification of arsenic in complex organic mixtures. Dr. Christison's plan is to be followed till

the sulphuret of arsenic is precipitated. This precipitate is to be allowed to subside and the super natant fluid removed. The residuum is then to be washed with distilled water. The sulphuret after this process is to be transferred to a deflagrating tube; this is effected without loss, where the quantity is minute, as follows: diluted ammonia is to be added till the whole of the sulphuret is dissolved; this solution is to be poured into the tube; acetic acid is now to be added in excess, and the tube gently heated, when the sulphuret will again precipitate. The acetate of ammonia is to be removed and the sulphuret well washed, and then dried. Nitrate of potass is next to be added and deflagrated: By this process, the arsenic of the sulphuret is peroxidated, and converted into arsenic acid, which unites with the potass, set at liberty during the operation, and forms arseniate of potass. As soon as the nitrous gas, (evolved from the nitre) is dissipated, and the tube is cool, hot distilled water is to be added till the residue is dissolved. If the solution be now touched with a stick of lunar caustic, a brick red precipitate is formed; this should be permitted to subside, and the caustic again applied, until a precipitate is no longer formed. These precipitates are to be well washed, and transferred to a watch crystal and dried. The dried salt, which is the arsenite of silver, is now to be mixed with boracic acid and freshly made charcoal, put in a tube and reduced. This will afford a well defined crust of metallic arsenic.

It should be noticed, that this is only applicable to arsenious acid and its compounds; in cases where there is no clue to the compound to be sought for, Dr. Venables, recommends the following, which is a modification of a plan proposed by Orfila.

The contents and tissues of the stomach, the latter cut into small shreds, are to be well boiled in nitric acid, till as much of the animal matter as possible has been destroyed, distilled water being added, according to circumstances. It is now to be filtered, and potass added in slight excess, and afterwards acidulated with acetic acid, when a stream of sulphuretted hydrogen gas is to be passed through it. If a yellow precipitate is formed, it is to be treated as above. By boiling with nitric acid, not only all the preparations of arsenic, soluble in this menstruum, and

water are taken up, but by far the greater proportion of the organic matters are destroyed. The soluble preparations pass through the filter, but such as are not so, remain, and must be sought for as follows: all that remained on the filter should be dried, and then projected in small portions at a time into a Florence flask, containing a large proportion of nitre in a state of fusion. Any arsenic that is present will be peroxidated and converted into arsenic acid, which unites with the potash, forming a soluble arseniate, which is to be treated as before described.

It should be borne in mind, in making an examination of the stomach and intestines of a person supposed to have been poisoned with arsenic, that the mucous membrane is sometimes found studded with a multitude of white and brilliant grains, which may be mistaken for the poison in substance, and which are only composed of albumen and fat. (*Briand.*)

Tartar Emetic. The external application of this salt will sometimes produce salivation; we met with an instance of this, a notice of which will be found in the American Journal of Medical Sciences, vol. 2, page 233.

We might extend this addition to Dr. Ryan's text to an indefinite length, but as the work is intended as a mere compend, we must refer such of our readers as wish for fuller information on the subject, to the treatises of Beck, Orfila, and Christison.]

CHAP. XVI.

Adulterations of Alimentary Matters.

Mr. ACCUM. in his meritorious work on Culinary Poisons, gives a comprehensive account of the adulterations of the various foods and drinks which are used by every class of society; and to this valuable production I must refer the reader for the author's details of the sophistication of the necessaries of life. He justly observes, "the traffic in adulterated commodities finds its way through so many circuitous channels, as to defy the most scrutinizing endeavour of individual exertion to trace it to its source." It can, however, be traced to

the wine merchant, the distiller, the brewer, the publican, the druggist, the baker, the tea dealer, the butcher, the dairyman, and every one else who adulterates an article of food. I shall notice the most common adulterations.

Wines are adulterated with bitter almonds, or leaves of cherry-laurel, in order to impart to them a nutty flavour; with sweet briar, orrice-root, clary and cherry-laurel water, and elder flowers, to give a high flavour; with alum, to render young and meagre wines bright; with cake of pressed elder-berries and bilberries, to render faint coloured port, dark; with red sumach, to colour white wines red; with oak saw dust or sloes, or husks of filberts, to give astringency to unripe wines; with tincture of raisin-seeds, to flavour factitious port; and with a variety of spices to render wine pungent.—*The Vintner's and Licensed Victualler's Guide*, p. 259.

It need not be stated, that most of these substances are poisonous. Acetate of lead, or sugar of lead, is added, for fining or clearing cloudy or muddy white wine; the dangerous and fatal effects of which have been described in the article on Mineral Poisons. (See p. 234.)

According to *The Mechanic's Magazine*, the analysis of a bottle of cheap port wine was as follows:—Spirits of wine, three ounces; cider, fourteen ounces; sugar, one ounce and a half; alum, two scruples; tartaric acid, one scruple; strong decoction of logwood, four ounces.

The Cape wine generally sold, is composed of drippings of the cocks of the various casks, the filterings of the lees of the different wines in the adulterator's cellars, or from any description of spoiled white wines, with the addition of brandy or spoiled cider.

Champagne, Burgundy, Barsac, Sauterne, &c. are poisonous trash, manufactured in London. It appears, by a trial which lately took place in the Court of King's Bench, that the scarce and costly Tokay, the Lachryma Christi, and La Creme Divine, are Sicilian wines of an inferior description. Wines are adulterated in the docks; inferior articles, false descriptions, substitutions for the one selected, take place there as frequently as elsewhere.

Potass and lime are added to wine for the purpose of ar-

resting fermentation. These are detected by evaporating the fluid, treating it with alcohol, and adding the hydrochlorate of platina, which causes a yellow precipitate; and oxalic acid forms a white precipitate when lime is present. It is to be recollected, however, that most wines contain a small portion of potass and lime. The salts of lead are detected by adding chlorine, and then successively sulphuric acid, which causes a white precipitate (*sulphate of lead*), hydrosulphuric acid (*black sulphuret of lead*), chromic acid, or a soluble chromate (*yellow chromate of lead*). When sulphuric acid is added without chlorine, the precipitate being dried and calcined with caustic potass, a small portion of metallic lead will be obtained. If one part of water, saturated with sulphuretted hydrogen gas, and acidulated with a small portion of muriatic acid, is added to two parts of wine, a blackish precipitate is thrown down, which being dried and fused by the blow-pipe, yields a globule of metallic lead.

When white wines are sweet, and their use, or that of red wines, is followed by colic or pain in the stomach or bowels, it may be concluded that they have been adulterated with lead.

Alum is detected by dropping a solution of subcarbonate of potass into the wine, which will cause a violet coloured precipitate, or a cloudiness, which will disappear by the addition of muriatic acid, or liquor potassæ. If equal parts of lime water and wine be mixed, a slimy or muddy precipitate occurs when alum is present; and when the wine is genuine, crystals will be deposited in twenty-four hours.

The colouring matters are detected by acetate of lead; when a blue precipitate takes place on its addition, we may suspect the juice of elder-berries, bilberries, or campeachy wood to be the adulteration; and when a red precipitate, red sanders wood, beet or fernambouk wood. When the wine is pure, a greenish gray precipitate is produced. According to Dr. Prout, ammonia causes an olive green precipitate, when wine is adulterated.

Tannin will be discovered by adding a solution of isinglass, when a gelatinous precipitate occurs, whether the wine be Port, Claret, or Burgundy.

Brandy and British Spirits.—Cogniac brandy is imitated by mixing Spanish or Bordeaux brandy, rum, British brandy, British brandy-bitters, cherry-laurel water, almond cake, capsicums, grains of Paradise, burnt sugar, or other colouring matter.

British brandy is a compound of gin, oil of vitriol (*sulphuric acid*), nitrum dulce, or nitrous ether. The gin, rum or whiskey, is first distilled, and then the deleterious ingredients are added. (*The Wine and Spirit Adulterators Unmasked*.)

Jamaica rum is manufactured in "Modern Babylon," by a bad Leeward Island rum, ale, porter, or shrub, orrice-root, cherry-laurel water, grains of Paradise, or capsicums. The ripe taste of old rum or brandy is imparted to new liquor by oak saw dust, or tincture of raisins. The poisonous cherry-laurel water gives a cordial flavour, and sugar of lead may be included among the ingredients.

Gin, "the real comfort," "the liquid fire," alias "blue ruin," is patronized by the poor of "the queen of cities," for its genuineness. The ingredients in this compound are whiskey, water, oils of vitriol, turpentine, juniper, cassia, carraways, and almonds, sulphuric ether, orrice and angelica roots, capsicums, grains of Paradise, sugar, lime water, spirits of wine, and heading.—(See a work entitled, "*Deadly Adulteration and Slow Poison, or Disease and Death in the Pot and in the Bottle*," &c. 1830.)

Brandy is adulterated with pepper, long pepper, capsicum, and stramonium. On evaporating the fluid, the taste of these ingredients becomes more evident. When cherry-laurel leaves have been steeped in brandy, the proto-sulphate of iron, causes a blue precipitate (*Prussian blue*), or the material from which prussic acid is obtained. When alum is present, chlorine is to be passed through the fluid, then filter and evaporate to a third, and a reddish deposit takes place. When water and alcohol are added to brandy, litmus paper is not reddened, which always takes place if the liquor is genuine.

The adulteration and false strength of spirituous liquors, as brandy, rum, malt spirits, are detected by diluting the liquor with water, when the acrimony of the capsicum, pepper, or grains of Paradise may be easily discovered by the taste.

If we distil a quart of the suspected liquor, the residuum, if capsicums or grains of Paradise are present, will retain a hot pungent taste. If chalk is dropped into adulterated liquor, and a milkiness appears, either sulphuric or nitric acid is present, for in genuine spirit the chalk will lie at the bottom. The purity of spirits may be ascertained by igniting a quantity of the fluid in a spoon, when, if unadulterated, the whole will burn away without leaving any moisture. Lead may be detected in the same manner, as mentioned, when mixed with wine.

Cider and Perry, often contain lead, which will be precipitated by a solution of molybdate of potass, however small the quantity. A white deposit takes place.

Vinegar, when prepared from wine, gives an abundant precipitate with acetate of lead; and when reduced by evaporation to a fourth or sixth of its volume, deposits crystals of supertartrate of potass, or cream of tartar. When vinegar is prepared from cider, it does not possess these characters—it gives a copious precipitate with oxalic acid and nutgalls; and if evaporated to the consistence of syrup, it affords a residue slightly acid, glutinous, of the odour of apple. When adulterated with sulphuric or muriatic acid, baryta detects the former, and nitrate of silver the latter. But as all vinegars contain sulphates and hydrochlorates, we should experiment upon a quantity of suspected and pure fluid, and compare the results.

Beer and Ale are adulterated with the following poisonous ingredients, according to the evidence laid before the Committee of the House of Commons in 1819 :—

Cocculus Indicus, a powerful narcotic and intoxicating drug (see p. 250), hard multum, a compound of a poisonous Indian berry, opium, &c. nux vomica, and Ignatius' bean, two of the most powerful poisons (see p. 248), opium, tobacco, extract of poppies, henbane, Bohemian rosemary, burnt sugar, and heading, which is green copperas, or sulphate of iron. In the possession of one adulterator, 310lbs of copperas, and 560 lbs. of hard multum, were found and condemned. Capsicums, grains of Paradise, molasses, liquorice-root, wormwood, aloes, bitter oranges, quassia, lime, marble-dust, oyster-shells, harts-

horn, &c. (*Lardner's Cyclopædia—Domestic Economy*—By Mr. Donovan).

Mr. Child, in his *Treatise on Brewing*, recommends “a dash of vitriol for making new beer old; and also alum.”

Bread and flour are sophisticated with powdered gypsum, or plaster of Paris, whiting, slacked lime, chalk, finely powdered granite, pipe clay, particularly white Cornwall clay, flour of garden peas and horse beans, potatoes, bone-ashes, alum, sulphuric acid, sulphate of copper, subcarbonates of ammonia, potass, and magnesia; alum mixed with salt is one of the commonest ingredients.

The subcarbonate of potass is used to cause the bread to swell or rise. It is detected by steeping the bread in distilled water for twenty-four hours; the solution is then to be filtered, and will turn syrup of violets green, and give a yellow precipitate, with hydrochlorate of platina, and effervesce with nitric acid. When we wish to discover alum, the preceding solution will give a precipitate with ammonia and potass, the sulphuric acid will unite with baryta, and if the solution be evaporated, crystals of alum will appear. Sulphate of copper, or blue vitriol, is obtained by burning the bread to a cinder, and heating it with diluted sulphuric acid. It becomes of a sky-blue by the addition of ammonia, and affords a black precipitate by hydrosulphuric acid, a red one by sulphate of potass, and it deposits a coat of metallic copper on a polished piece of iron. Flour is always mixed with sand, occasioned by the friction of the millstones during grinding; and the quantity which each individual swallows annually is estimated at 6lbs.—(*History of Inventions*.) Good bread is spongy, and will keep for some days, whereas the adulterated description crumbles and becomes mouldy in a few days. If bread be sliced and boiled slowly, a deposition of the earthy ingredients will be found in the form of a white powder on the bottom of the vessel.

Tea is imitated and manufactured in this country with dried leaves of the white and black thorn, elder, birch, ash, &c. and the colouring is effected with catechu, logwood, verdigris, copperas, Prussian blue, carbonate of copper, and Dutch pink. The leaves are boiled, and then pressed, and baked on

plates of iron, or of copper, and lastly coloured. So far back as 1783, it is stated, in a Report of the House of Commons, that "the quantity of fictitious tea manufactured from sloe and ash leaves, in the different parts of England, to be mixed with genuine teas, was computed at more than four millions of pounds weight." This computation was made when the East India Company sold six millions of pounds annually, and what must it be now, when the Company's sales are about thirty millions of pounds annually? To detect adulterations, a cup of infusion of the article is to be taken, and a grain of sulphate of copper, or of blue vitriol, added; when, if it be genuine green tea, a fine blue colour will be produced; if pure bohea, a deep blue, next to black, and if adulterated, a variety of colours, as green, black, yellow, &c. will take place. If on adding a piece of nutgall, a black colour is produced, we have direct evidence of the existence of vitriol or copperas.

Coffee is imitated by commixing ground acorns, horse-chestnuts, horse beans, peas, nuts, barley, rice, wheat, parsnips and carrots, and especially by roasting blue succory or rye with a few almonds. All these substances are torrifed or roasted.

Chocolate is often adulterated with vanilla and castile soap.

Sugar is sophisticated by mixture with lime, chalk, gypsum, plaster of Paris, and various other white materials. Soft sugar is generally mixed with sand.

Milk and *cream* are sophisticated; the former is mixed with water, or the common cheese-dye (annatto), which occasions the mixture to assume the colour and consistence of cream. Skimmed milk and arrow root, boiled together, are added to cream. Chalk and whiting cannot be added to milk, without precipitation. Molasses and salt are often substituted for the cheese-dye, but do not answer so well. The practice of placing milk in leaden pans to increase the cream, is highly injurious. Milk is often adulterated with starchy or feculent matters, which render it thick, oily and creamy. Tincture of iodine will cause a yellow precipitate, when the milk is not boiled, but the colour may be bluish or lilac-blue in proportion as the adulteration is considerable. When the fluid is boiled, the precipitate will be blue.

Subcarbonate of potass is added, to prevent coagulation.

The alkaline taste and effervescence with acids, and a yellow precipitate with hydrochlorate of platina, enable us to detect this fraud.

Oxide of zinc is added to thicken milk, and is detected by adding sulphuric acid, which causes a coagulation; the fluid is to be strained, and will give a white precipitate by the addition of the alkalies and hydrosulphates; this is to be calcined with caustic-potass, and powdered carbon, when a small portion of metallic zinc will be found on the bottom of the crucible.

Confectionary and *pastry* are so much adulterated as to excite the abhorrence of the faculty: Dr. Paris designates them "an abomination."—(*Work on Diet.*) The white comfits, called sugar peas, are composed of sugar, starch, and Cornish clay, a species of pipe clay; the red sugar drops are coloured with vermilion or sap green, red lead and copper. The chromate of lead is used as a yellow colour, and prussiate of iron as a blue. For the deleterious properties of these substances, I refer the reader to the article Mineral Poisons, as also for the modes of their detection. There is a valuable paper on Poisoned Confectionary, in the *Lancet*. No. 402, 1831, by Dr. O' Shaughnessy, which will be read with advantage by all who desire information on this point. It is well known that the almond-kernel flavour of custards, blanc-mange, &c. is communicated by the poisonous cherry-laurel, which affords so much prussic acid. For further information on the poisonous effects of the adulterations mentioned in this paragraph, I beg to refer the reader to the chapter on poisons.

Adulteration of Medicines.—There is no country in the world in which medicines are so much adulterated as in this; in fact, it is almost impossible to procure a single article in the Pharmacopœia in a genuine form. The most powerful medicines produce no effects, and the physician is disappointed almost hourly, and the patient's health or life sacrificed. This monstrous state of things is to be ascribed to the supineness and apathy of the Royal College of Physicians and Company of Apothecaries, who are empowered by law to destroy all bad drugs, and to fine all who vend them. But these bodies, unmindful of the solemn duty they owe the public, neglect to

exert that salutary power which was confided to them by the legislature, and carelessly witness the incalculable sacrifice of human life, from adulteration of those ample agents which a beneficent Providence has bounteously afforded for the alleviation and cure of the "many ills which flesh is heir to." If there was no other charge, and there are many, against these bodies but this, it ought to be more than sufficient to transfer their powers into other hands. The farcical inspection of shops, so well described by one of the Fellows of the College has excited the sorrow and contempt of every genuine friend to medical science.

Let us next turn to the state of charlatanism in this empire, "the land of the good and the wise," where the most ignorant and illiterate persons are allowed, with reckless indifference, to assume the titles and privileges of educated medical men, to the destruction of human health and life. The College of Physicians, the guardians of public health are too much inflated with pride and vanity, to interfere to prevent wicked and inhuman impostors from deluding and ensnaring the giddy multitude, the *ingens turba stultorum*, that constitutes the public. Nay, we have even a Fellow of the College defending an ignorant, rash and daring empiric, a convicted felon, and arguing that this nostrum-monger is a more successful practitioner than the most eminent physicians and surgeons of this metropolis. What encouragement exists for the regular physician and surgeon, who have sacrificed their lives, health and property to the study of their profession, when they find themselves superseded by some inspired pretender—some villainous quack? The sanction given to quacks and quackery in this country, has long and loudly been stigmatized by foreign writers, and is a disgrace to the College of Physicians. Most of the vermin that infest this intellectual city are "the lowest of the low"—cobblers, tailors, weavers, painters, footmen, pensioners, &c. &c. generally the most notorious vagabonds in their respective districts. "But unhappily," says an able writer, "it appears that poor John Bull and his family are not gifted with the power of being aware of hypocrisy, advertising charlatans and empirical nostrums; but through their proneness to gullability and love of the marvelous, the trade

of quackery is daily increasing, and some hundreds of quacks swarm in every corner of the metropolis; and fatten on the murders which they are constantly perpetrating with their poisons." Recent examples attest the truth of these remarks. My limits prevent me from prosecuting this ample theme, but I console myself with the conviction, that the time has at length arrived when medical reform, like parliamentary reform, can no longer be withheld, when the stupid and inane corruptionists, the medical boroughmongers, if I may be allowed the phrase, will, like their prototypes, be completely annihilated or compelled to swallow a pill, as bitter and as potent as that marvellous discovery—the Russell purge.

CHAP. XVII.

Medico-Legal Questions relating to Mental Alienation.

THE medico-legal questions relating to mental alienation are, according to Professor Amos, of the London University, three in number; 1, whether a person be competent to manage his affairs; 2, whether he ought to be discharged from criminal responsibility; 3, whether his will and testament be a good will and testament. "Insanity means a very different thing in the English language, according as it is spoken of with reference to these different inquiries."

1. Whether the Person be competent to manage his Affairs?

Lord Chancellor Hardwicke held, that "unsound mind was understood by courts of law, importing not weakness of understanding, but a total deprivation of sense."—*Collinson on Lunacy*.

Lord Eldon held the opposite opinion. "Of late," says his lordship, "the question has not been, whether the party is insane; but the court has thought itself authorized (though certainly many difficult and delicate cases, with regard to the subject, occur upon that,) to issue the commission (*de lunatico inquirendo*,) provided it is made out that the party is unable to act with any proper and provident management, liable to be

robbed by any one, under *imbecility* of mind, not strictly insanity, but, as the mischief, calling for as much protection as actual insanity.”—8 *Vesey*. Lord Lyndhurst reversed this verdict, “that the party was not a lunatic, but partly from paralysis, and partly from old age, his memory was so much impaired as to render him incompetent to the management of his affairs; and consequently that he was of unsound mind, and had been so for the term of two years.”—4 *Russell’s Rep.* 183.

“In these cases of commissions of lunacy,” says Mr Amos, “the jury are to find the party either of sound or unsound mind.” But this state of soundness of mind, in the legal sense of the present day, is perhaps not very easy to define, for it is neither lunacy, idiocy, imbecility, or incompetency to manage affairs. It however always involves the idea of unfitness to manage a person’s affairs. The term unsoundness of mind, therefore, in its legal sense, seems to involve the idea of morbid condition of intellect, or loss of reason, coupled with an incompetency of the person to manage his own affairs.—“Soundness of mind is a legal term, the definition has varied, and cannot, even in the present day, be stated with any thing like scientific precision.”—*Lectures on Medical Jurisprudence, Medical Gazette, July, 1831, v. 8, p. 419.*

2. *Whether a Person ought to be discharged from Criminal Responsibility?*

To determine this question, the medical witness is usually asked, “whether the person has a sense of *right* and *wrong*?” Mr. Amos thinks this a question for the jury, and not for the medical jurist, who in general confines his investigation to the discovery of the sanity or insanity of the person. This is generally true, though in the course of examination of the supposed lunatic or maniac, the medical jurist may learn from his conversation his opinions on good and evil—right and wrong. “The kind and degree of insanity,” continues Mr. Amos, “which renders a person irresponsible for criminal acts, is a subject upon which it is impossible to give you any precise and scientific notions.”—*Op. cit.*

3. Competency of Insane Persons in Civil Cases.

I shall next consider the liability of lunatics for their civil contracts. Lord Tenderden decided, that a lunatic (Lord Portsmouth) was responsible for goods sold him by a tradesman, such goods being suitable to his condition, and his insanity being unknown to the plaintiff.—5 *Barn. & Cresw.* 172: and in a similar case, 1 *Moody & Malkin*, 105. The Ecclesiastical court have allowed a person who was a lunatic, and had contracted a marriage in that state, to have a divorce on his recovery.—1 *Haggard*, 414.

The following lucid exposition of the difference between the responsibility of lunatics or insane persons in civil and criminal cases, by Sir John Nicoll, Judge of the Prerogative Court, fully accords with the received opinions of medical writers:—

“As far as my own observation and experience can direct me, aided by opinions and statements I have heard expressed in society, guided also by what has occurred in these and other courts of justice, or has been laid down by medical and legal writers, the true criterion is—where there is delusion of mind, there is insanity; that is, when persons believe things to exist, which exist only, or, at least, in that degree exist only, in their own imagination, and of the non existence of which neither argument nor proof can convince them, they are of unsound mind; or, as one of the counsel accurately expressed it, ‘it is only the belief of facts, which no rational person would have believed, that is insane delusion.’ This delusion may sometimes exist on one or two particular subjects, though, generally, there are other concomitant circumstances—such as eccentricity, irritability, violence, suspicion, exaggeration, inconsistency, and other marks and symptoms which may tend to confirm the existence of delusion, and to establish its insane character. The law then does recognise partial insanity, in the sense already stated; and, in civil cases, this partial insanity—if existing at the time the act is done, if there be no clear, lucid interval—invalidates the act, though not directly connected with the act itself; but, in criminal acts, it does not excuse from responsibility, unless the insani-

ty is proved to be the very cause of the act.”—(See p. 291.)

A man deranged upon some or many subjects, may execute a bond which the solicitor and witnesses proved to have been executed with caution and perfect competency, though the person so doing, acted on other points, in the most insane and extravagant manner. The jury found that the bond was valid.—*Law Magazine*, No. vii.

A person habitually insane may have intermissions or lucid intervals, during which he may make his last will and testament, which will be valid. The principal judicial decision upon this point is the judgment of Sir W. Wynne. “Now I think the strongest and best proof that can arise of a lucid interval, is that which arises from the act itself (the making of a will), that I look upon as the thing to be first examined, and if it can be proved as established that it is a rational act, rationally done, the whole case is proved. Because, suppose you are able to shew that the party did that which appears to be a rational act, and it is his own act entirely, nothing is left to presumption in order to prove a lucid interval.”—1 *Philimore*, 100.

It is however extremely difficult to prove the existence of a lucid interval. According to Dr. Willis, the man is not of sane mind until he acknowledges his delusion, the validity of which opinion is fully proved by reference to works on Insanity and Medical Jurisprudence.

The medical jurist should recollect that the states of health and of mind of a person making a will, are often to be proved by him, in the event of such will being disputed. He should always note in writing his opinions on these points as soon after his return home as possible. I have witnessed men in articulo mortis, in a state of slight stupor, from which they were roused by being spoken to in a strong voice, called upon to sign their wills, cases in which the patient relapsed into his stupor at the interval of five or ten seconds, and I have known one man sign his name under such circumstances.—The will was not read to him, but he was told by his nephew and the solicitor that it was prepared according to his instructions. He certainly was not in a disposing mind, for he would sign any document presented to him; in a word, I

should have considered him incompetent, for he was not of "sound mind, memory or recollection."

A medical man is not warranted in granting a certificate for the confinement of an insane person, on the representation of relations, without having examined such person according to the statute, unless he is satisfied upon such statements that such a step is necessary, to prevent some *immediate injury* from being done by the individual either to himself or to other persons; and if access cannot be had for the purpose of examination, application should be made to the Lord Chancellor, that the party may be taken up under his authority.—*Anderson v. Burrows*, 4. *Carrington and Payne*, 210. In this case the plaintiff was confined on the certificate of Dr. Burrows, who had not visited him, according to the statute, and he had damages £500.

The symptoms of mania and the various shades of mental alienation are so minutely described in monographs, that we need not detail them in this place. The general opinion of physicians is, that the following mental affections exonerate individuals from responsibility:—delirium, epilepsy, loss of self-consciousness, idiocy, dementia, mania, monomania; and somnambulism; inebriety produces delirium, but intoxication will not be received in palliation of a criminal act, as it is a voluntary act of the party. Monomania is a palliation, as exemplified in the case of Martin, the incendiary of the York Cathedral; and also in the case of the individuals who attempted to assassinate King George III. and the Duke of Wellington, when prime minister.

It behoves the medical jurist to be well acquainted with the symptoms of mental alienation, as this condition is often feigned for the purpose of evading punishment. In such cases we should learn the history of the individual, hold frequent conversations with him, have him watched when alone, for if he feigns his malady, there will be no signs when the pretender is alone; the real lunatic denies his condition during a lucid interval; the person who assumes disease never wishes to conceal it. The pretender cannot prevent sleep for any length of time, the maniac is unaffected by watchfulness. There is a kind of reflection and hesitation in the discourse of the pre-

tender, his wild ideas do not succeed each other with such rapidity as in the maniac. The threat of severe punishment, as flogging, the application of red iron, unless the patient is better next day, will have no effect upon the maniac, but will cure the pretender.—(*Zacchias, Fodere, Beck.*)

On the other hand, insane persons *conceal* their condition to escape confinement; the cunning and dissimulation practised on such occasions are really surprising.

Some remarkable cases of this kind are narrated, in the systematic works on Forensic Medicine. In one case, a maniac was silent on his hallucination, notwithstanding the severest examination of counsel; and hence the public could not be persuaded that such a person was insane. When he is watched closely by his ordinary or medical attendants, he will, in general, be easily detected.

[The question of Insanity, involves the consideration of some of the most difficult points that can become the subject of judicial investigation; and notwithstanding the number of volumes that have been written to elucidate it, it still remains in a most unsatisfactory state. The following summary of the law on the various points, which we abstract from Professor Cooper's paper, may be useful.]

“In England, Insanity becomes a legal question in the following cases:

1. When a certificate of Insanity, is required under the acts of Parliament, relating to mad-houses, before a patient can be sent to one of those receptacles. Luckily we have none of these establishments as yet among us: and I hope the public hospitals will long supersede the necessity of them.

2. When insane persons require to be committed to the care of their friends, for the security of their persons and their properties. This is done by an application to the chancellor to appoint a commission of lunacy, which he does in character of representative of the king, who by royal prerogative had the guardianship of insane persons.

3. When civil contracts are disputed on the ground of insanity in one of the parties.

4. When insanity is set up as a defence to an indictment for a crime committed.

As to the second head, viz. *Commissions of Lunacy*.

In England, these are never granted, but on application to the chancellor, who exercises the royal prerogative in this respect, and who never delegates his authority, even to the Master of the Rolls. 2 Atk. 554. 3 Atk. 635. Ex pte Hall. 7 Vez. jun. 261. 2 Dick. 558.

In the United States, commissions are usually granted in pursuance of the practice in England, on application to the Court of Chancery. In Pennsylvania, where we have no Court of Chancery, they are granted on application to the Court of Common Pleas. The process is this: a petition, accompanied by affidavits, in support of the alledged insanity, is presented to the court, praying that a commission may issue. If the affidavits are sufficient in the opinion of the court, a commission is directed to three or five persons as commissioners, who are directed to cause a jury to be summoned by the Sheriff of the county; with which jury, the commissioners sit as a court; and hear the evidence adduced. Regularly, the lunatic, and the persons who have the care and custody of him, ought to be served with notice of the application, in the first instance: for they may either oppose the application, or offer to the court their own list of commissioners.

If a committee should be appointed, the court will allow the expense of the application, because it is always considered as in favour of the lunatic: but if the finding be "of sane intellect," or to that purpose, then the court has no fund under its controul, out of which it can direct the expenses to be paid. Ex pte Ferne, 5 Vez. 450, 832.

In a commission of lunacy, the question is *compos mentis*, or *non compos mentis*; of sound intellect and capable of governing himself and managing his worldly concerns—or of unsound intellect, and incapable of governing himself and managing his worldly concerns. From whatever cause lunacy may arise, *the point is sound mind, or unsound mind*. The return must be such a one, as will admit of being traversed or denied. It is not sufficient, on such a return, to say the party is so far debilitated in his mind, as to be incapable of the general management of his affairs, and has been in the same mind for six months last past. On such a return, a new

commission must issue. (A commission acted on, cannot be sent back on melius inquirendum : there must be a new one, Ex pte Roberts, 3 Atk. 6.)

There are innumerable instances of commissions, the objects of which, were clearly, not lunatics, in the strict sense of the word, but persons disordered from causes that could not (from their nature) admit of lucid intervals. Old age, for instance; a glimmering of understanding only left; a state produced by no sudden cause, but the gradual effect of time on the mind. Ex pte Cranmer, 12 Vez. jun. 446. Herewith seems to agree the definition of Lord Coke, Co. Litt. 246 b, and Beverley's case, 4 Co. Rep. 123, who states the question to be, whether the party be or be not, *non compos mentis*, from whatever cause. The question is not, whether he be amens, demens, furiosus, lunaticus, fatuus, stultus, but whether he be or be not, *compos mentis*, of sound mind. The old writs indeed, direct the inquiry, whether the party be idiota et fatuus a tempore nativitatis suæ, an ab alio tempore, a quo tempore, qualiter, et quo modo, et si lucidis gaudeat intervallis; but the question now is, simply, of sound or of unsound mind; whether from sickness, grief, accident, old age (as in Beverley's case) intoxication, or whatever other cause. Ridgeway v. Darwin, 8 Vez. jun. 45. Ex pte Cranmer, 12 Vez. jun. 453. In the matter of Barker Johnson's Ch. Rep. 232.

In England, the commission is usually directed to five commissioners, or any three of them, and may be so here. The person first named in the commission, is a barrister at law; and it belongs to him to address the jury, and explain to them the nature of the proceedings and their duty. The sheriff is also required to summon twenty-three jury men, of whom the verdict of twelve is valid; but it is expedient, that what is meant to be for the good of the insane person and his estate, should be done at as little expense as the nature of the case will admit; and so many jurors, seem a needless increase of expense, as well as a needless tax on the community. The commission ought to be executed as near to the place of abode of the lunatic, as conveniently may be, 34 Ed. 3 ch. 13, 14. 8 H. 6 ch. 16. 23 H. 6 ch. 16. 1 H. 8 ch. 8. Ex pte Ferne, 5 Vez. jun. 450. Ex pte Southcote Ambl. 112. 2 Vez. sen.

405. Ex pte Hall, 7 Vez. jun. 261: and the lunatic should be brought up; for which purpose, the commissioners should issue their warrant to the persons in whose custody he is: and, although this be discretionary with the commissioners, it seems a kind of evidence too important to be neglected. Ex pte Southcote, Amb. 112. 2 Vez. sen. 405. But if the lunatic be abroad, or carried away, the commission may nevertheless proceed. Ex pte Ferne, 5 Vez. jun. 450.

To insure accuracy therefore, the jury ought to be instructed, that according to the evidence adduced before them, they are to find the supposed lunatic, J. L. to be, either a person of sound intellect, and capable of governing himself, and managing his worldly affairs; or else, that he is a person of unsound intellect and incapable of governing himself and managing his worldly affairs; by reason,

a. Of idiocy from his birth, or subsequent to his birth.

b. Or, by reason of lunacy, wherewith he appears to have been first afflicted at such a time, and which has continued from that time, to the time of the present finding of the jury of inquest, with or without lucid intervals, as the case may be.

c. Or, by reason of sickness, wounds, bruises, grief, immoderate use of intoxicating liquors, old age, or other cause, stating as near as may be, the commencement of his becoming unsound of intellect.

It is the duty of the commissioners to hold their inquest openly, and receive any testimony offered, relevant to the point at issue. 1 H. 8 ch. 8. 1 Vez. sen. 270.

If witnesses do not attend on the summons of the commissioners, the court will make an order upon them to attend. Ex pte Lund. 6 Vez. jun. 784.

Proof of insanity is not to be made out by rambling through the whole life of the person, but must be applied to the particular transaction, and at the time in question. White v. Wilson, 13 Vez. 89. Atty General v. Parnter, 3 Br. ch. ca. 441.

Of unsound mind, is a good return. Dennis v. Dennis, 2 Saund. 352. Ex pte Pouncefort, 3 At. 170. Ex pte Cranmer, 12 Vez. jun. 455. Carew v. Johnson, 2 Sch. & Lef. 304. Whether a return of lunacy be good, without stating whether the lunatic enjoyed lucid intervals, has been so often doubted

(*Ex pte Wragg*, and *Ex pte Ferne*, 5 *Vez. jun.* 450,) that it is safer to return the fact. For suppose a return of lunacy simply; and an alienee should wish to traverse the return; he cannot do it effectually, for the return does not exclude alienation during a lucid interval; and he will be driven to his issue at law. *Hall v. Warren*, 9 *Vez. jun.* 605. A person born deaf and dumb, may be compos. 2 *Dickens*, 268.

For proceedings, where the finding is against evidence, see *Ridgeway v. Darwin*, 8 *Vez. jun.* 65.

Of *traversing the commission*. By the English statutes, it is allowed as a matter of right, to traverse the inquisition, at any time, even though the chancellor should be satisfied with the return. *Ex pte Wragg*, and *Ex pte Ferne*, 5 *Vez. jun.* 452. The traverser must give security. *Rex v. Barlow*, 5 *Vin. Abr. Sup.* 317.

A committee having custody of the person or property of a lunatic, may be restrained from interfering or acting, until a traverse tendered, be decided; and the lunatic may be ordered to remain under the controul of a physician. Per *Ld. Ch. Erskine* in *Ludlam's case*, Feb. 1807. *Collinson on Lunacy*, vol. i. p. 174.

No traverse after recovery of the insane. 3 *Atk.* 312.

Alienee of non compos may traverse; *R's case* 15 *Vin. Ab.* 141, or may join in traversing, in which case he will be bound by the finding, but not otherwise. 3 *Atk.* 7.

A person who has contracted to purchase or to sell property, may traverse. *Ex pte Morley*. 9 *Vez. jun.* 478. *Ex pte Hall*, 7 *Vez. jun.* 261.

The chancellor will make a provisional order as to the lunatic and his property, pending a traverse. In the matter of *Hely*, 3 *Atk.* 635. Where a traverse will not answer the purpose, a person interested against the return of the commission may contest it either by suit at law or in equity, according to the circumstances of the case. Thus, for instance, how far the lunacy of a partner, will amount to a reason for dissolving the partnership, will depend on the degree and probable duration of the disorder. See 2 *Vezey and Beames*, 303. *Waters v. Taylor*.

Insanity once established, proof of recovery is on the party.

White v. Wilson, 13 Vez. 89. Atty. Genl. v. Parnter, 3 Br. ch. ca. 441.

Death of non compos. If non compos die before inquisition held, it cannot be holden. 4 Co. 127 a.—Orders previously made, do not abate by death of non compos; Ex pte Armstrong, 3 Br. ch. ca. 238. nor is the jurisdiction of the chancellor, terminated by the death of non compos, for proceedings may be terminated, notwithstanding his death, that had commenced during his life. Ex pte M'Dougal, 12 Vez. 348. and petitions may be preferred, relating to the property of the lunatic, even after his death. 2 Dick. 552. Wigg v. Tyler, and several cases in Collinson, I. p. 320—322.

Of superseding a Commission. It may be superseded, if it be made appear that the party was improperly found non compos. Skin. 5. If this be suspected, a caveat may be entered against the return, which will be heard before any committee be appointed; but the commission will not be superseded, unless upon very strong grounds, including the testimony of physicians. Harr. Ch. Pr. 383.

Non compos petitioning in his own name, may supersede the commission, if there be cause for so doing. Ex pte Stanley, 2 Vez. sen. 25. He must attend the hearing in person. 1 Fonb. Eq. 65. Ex pte Bampton, Mos. 78.

The medical affidavits ought not to be general, but full and explicit, as to the detail of the grounds on which the opinion is founded. 1 Collinson, 327. Those who live with non compos, proper witnesses. 3 Br. Ch. Ca. 444.

Any person aggrieved by a commission, may petition to supersede it. Ex pte Hall, 7 Vez. 264.

If commission be irregularly executed; or if a traverse be irregularly and inefficiently tried, a commission may be superseded. Ex pte Roberts, 3 Atk. 6. 1 Collinson, 328.

If commission remain unexecuted for an unreasonable time. Anon. 2 Atk. 52.

Of actions and suits by and against Insane Persons. An idiot must bring his suit in his own name, jointly with some other person, and appear and defend, personally. Co. Litt. 135, b. 2 Inst. 390. So, non compos must bring suit and defend in his own name, but his committee may be joined with

him. 1 Sid. 125. Hob. 215. Noy. 27. 1 Goldsb. 197. Ch. Ca. 19.

Statute of limitations, runs only from the recovery of non compos. 21 Jac. 1 ch. 16. 1 Tidd. 16.

If suit be brought against non compos, after inquisition, the return may be pleaded or suggested from the Court of Chancery. Ca. in Parl. 153.

Non compos (except in cases of idiocy) may defend by attorney, 4 Rep. 124 b.

Non compos, not a defence to an action at law. 1 Collinson, 347.

Non compos may be bankrupt. Ib. Anon. 13 Vez. 590. May sue in equity either by himself or others: under what circumstances, see *Smith v. Packhurst*, Ch. Ca. 112. *Atty. General v. Woolrich*, 2 Ch. Ca. 153, compared with *Viner's Ab. XV. 134*.

He or others on his behalf, must be a party to a suit instituted for his benefit. *Atty. General v. Tiler*, 1 Dick. 378. But where the effect of non compos being a party would be, that he would be obliged to stultify himself, he need not be personally a party to a suit. See the cases in the preceding paragraph and 3 Salk. 300. But it is no ground of demurrer that non compos has stultified himself. *Riddle v. Riddle*, Eq. Ca. Ab. 279.

In suits against non compos he may answer by his guardian: his committee is his guardian where a committee has been appointed, (*Mitf. 94. 1 Dick. 233.*) except in case of adverse interest, when another guardian pro lite will be appointed. *Snell v. Hyatt*, 1 Dick. 287.

If committee neglects to answer he may be removed. *Lloyd v. Mar.* 2 Dick. 460. On proof that a party is non compos, the court will appoint a guardian pro lite, (*Mitf. 95.*) but not otherwise, unless he be so stated in the bill, then a guardian is appointed of course. 1 Fowl. 477, 478. *Hind. 251. 14 Vez. 172.* A dumb man has been directed to answer a bill and interrogatories in person, *H. Ch. 124. Toth, 140. Wy. P. R. 292:* but not if he be also senseless. 1 Collinson, 357.

Non compos cannot be arbitrator or attorney, nor ought he to sit as judge. 1 Collinson, 358.

Of simple contracts of non compos. Debts contracted before insanity are good, but not afterwards unless for necessities. 1 Roll. ab. 257. 2 Sid. 55, 112.

Non compos liable to suits at law. Anon. 13 Vez. 590, and he may be taken in execution for debt and imprisoned as has been before stated: that is, he may be so in England: no where else I believe. T. C.

Creditors may refuse to come in under a reference of debts, and a sale of estate ordered accordingly: they have if they please their remedy at law: but the distribution of proceeds will be for the benefit of those only who do come in. 12 Vez. 385. 1 Collinson, 379.

A judgment creditor may file his bill against a voluntary settlement made by non compos. Colman v. Croker, 1 Vez. jun. 160.

The Chancellor will not reduce non compos to absolute want on account of creditors. Ex pte Dikes, 8 Vez. 79.

Nor will he direct the debts of a non compos to be paid unless for the accommodation of non compos. Ex pte Hastings, 14 Vez. 182.

Of written contracts by non compos. These are good if entered into while sane, though insanity should follow: even though they should be over reached by an inquisition of insanity, the parties may contest it, and aver that the contract was sane at the time. Faulder v. Silk and others, December 9, 1811. 1 Collinson, 390. For (per Ellenborough Ch. J.) the inquisition is presumptive only, not conclusive. Owen v. Davies, 1 Vez. sen. 82.

All deeds and contracts made during insanity, are void. 2 Roll. ab. 728. 4 Co. 124. 3 At. 311.

But non compos has no remedy in his own name at law. Stroud v. Marshall, cor. Ellenborough, 1 Collinson, 402. Nor in equity, because equity will not set aside the legal maxim, that a party cannot disable himself. Beverley's case, 4 Co. 124. It is to be hoped the absurdity of this doctrine will prevent its being considered as law here. But though the non compos cannot set up insanity, his committee after inquisition found, can. Riddler v. Riddler, Eq. Ca. Ab. 279. This legal objection to the plea of Insanity, did not prevail in the

time of Ed. 1. (Britton, ch. 28, fol. 66,) but was disallowed in the time of Ed. 3; (2 Bl. Comm. 291.) the court of equity has always supported the legal maxim above stated. 1 Fonb. Eq. 48. Fitzherbert properly rejects the modern adherence to this legal maxim, as an absurdity, F. N. B. 202. And it has in some instances, been overruled. 3 Mod. 305. *Yates v. Boen*, 2 Str. 1164. In all criminal cases, insanity may be pleaded, nor is there any good reason to be assigned, why it should not in all civil cases. For if non compos should recover before the return of inquisition, he has no remedy against a person who fraudulently took advantage of his previous insanity to procure from him deeds or contracts in a state of mental imbecility. For if no inquisition be returned, no committee can avoid the fraud; and the legal maxim, that a party shall not disable himself, prevents the suit. This may be English law and English equity: God forbid it should be adopted here.

After the death, however, of non compos, any person may take advantage of alienations made by him, during a state of insanity. *Thompson v. Leach*, 3 Mod. 301. 3 Salk. 300,—so that those who deal with non compos, render themselves liable (though not to him) to his committee, or to any other person who may be interested after his death. 3 Bac. Ab. 539.

But though no commission has issued, chancery will take cognizance on the ground of fraud. *White v. Small*, 2 Ch. Ca. 103. *Clarkson v. Hanway*, 2. P. Wms. 103. *Bennet v. Vade*, 2 Atk. 325,—especially where confidence has been reposed. *Duke of Cleveland v. Osmond*, 3 P. Wms. 130. *Wright v. Proud*, 13 Vez. 136.

But equity will decline interfering in such case, if it work great hardship to the other party. *Winchcomb v. Hale*, 1 Ch. Rep. 22; but the case of *Squire v. Pershall*, 8 Vin. 169. *Powel on Dev.* 68, 71—and 1 Fonb. 333, strongly militates. But see *Niell v. Morley*, 9 Vez. 478.

Where deeds are set aside as fraudulent, a reconveyance is not necessary. 2 Vez. jun. 294, unless there has been a conveyance to a third person innocent of the fraud: or unless the deeds are set aside on payment of a certain sum of money; and then the estate continues till the condition be fulfilled. 2 Vez. sen. 408.

Courts of law have concurrent jurisdiction with equity, in cases of fraud. 1 Fonb. eq. 66.

Non compos can neither grant or attorn. Co. Litt. 315, a. 6 Co. 69, Finch's case. Non compos may take by grant, 2 Atk. 413, and may inherit and make entry, Bryd. 21, but according to Littleton, Co. Litt. sect. 405, not if a descent be cast. But this depends on the absurd extent to which the English courts have carried the legal maxim, that no party shall disable himself.

Purchases and Feofments by non compos, are not void, but voidable. Co. Litt. 2 b. 4 Co. 123. 3 Bar. Ab. 357. 2 Roll. Ab. 728.

Of Criminal offences. All crimes consist in the intention : but no motive or intention can be ascribed to a disordered intellect—to a person insane at the time when he committed the alledged criminal act.—But it is not a sufficient excuse, that the alledged criminal has been formerly, or at times, insane ; the insanity, to excuse him, must be distinct and manifest, at the time of the act committed ; and although cunning and design may be shown in the mode of committing the act, yet if it be done under the influence clearly made out, of mental derangement, the actor ought to be acquitted. In all this, however, there is great difficulty, and apparent contrariety of decision. Maliciousness, and an almost irresistible propensity to acts of suicide or murder, are frequent among persons disordered in their intellect ; and although manifestations of cunning, contrivance and design, are exhibited in the mode of committing the act, it may nevertheless be the effect of an irresistible impulse arising from a deranged intellect. Mr. Chitty, in his Digest of Criminal Law, refers (3 Chitty 725,) for the law on the subject, to Lord Erskine's Speech in Hadfield's case. 5 Ersk. Speeches 1.

In Lord Ferrer's case, (St. Trials) he was found guilty, and executed, because although he was occasionally insane, he had capacity sufficient to form a plan and design for the murder of Mr. Johnson, and knew its consequences. Yet in Hadfield's case, who shot at the king, (1800,) although there were marks of design in his plan, and in his mode of firing the pistol, he was held to have committed the act under the influence

of insanity; of which marks appeared just before he went to perpetrate the act. Intoxication is clearly no excuse. This appears to have been one of the grounds for the very proper verdict of guilty in the case of Wm. M'Donnough, indicted for the murder of his wife, tried before the Sup. Court of Massachusetts, on 4th Nov. 1817. He had received a hurt on his head some years before, which rendered him occasionally furious and deranged. His disorder was always excited, even by a slight indulgence in ardent spirits: in one of his fits thus induced, he murdered his wife; was found guilty and executed. Like to this, was Bellingham's case for the murder of the honourable Spencer Percival, May, 1812. He was occasionally deranged, but found guilty, and executed.

Non compos ought not to be arraigned or tried.

Non compos acquitted, may be detained and confined.—Hadfield's case, 39 and 40. Geo. 3. ch. 94.

Persons inciting non compos, are principals. Keil. 53. Dalt. ch. 95. Hawk. P. C.

Of Widows. Widow of non compos deceased, entitled to dower. Co. Litt. 31. a.

Widower of non compos deceased, may be tenant by curtesy. 3 Bac. Ab. 534. Perk. 365.

Of Marriage of Non Compos. Non compos cannot contract matrimony, unless perhaps in lucid intervals. But if non compos marry, and having a lucid interval, the marriage is consummated, it is good. 1 Collinson, 554.

But if inquisition be had, and he be found non compos, he cannot contract matrimony, until he be declared of sound mind by the court. Ib.

A man cannot acquire any thing by marrying an idiot: the marriage is void. But a person born deaf and dumb, if compos, may contract matrimony by signs. Swinb. on Marriage, sect. 16.

To marry, or procure the marriage of non compos, is a criminal offence. Smart v. Taylor, 9 Mod. 98.

To marry non compos so found on inquisition, is contempt. Pre. ch. 703. Eq. Ca. Ab. 278.

Non Compos Trustee or Mortgagee, may convey by his committee under 4 Geo. 2 Ch. 10.

Of Wills. Non compos may not make a will unless during lucid intervals; he must be of sound and disposing mind and memory. 4 Bl. Comm. 497. Swinb. 72. Godolp. 25. 9 Vez. 610.

The onus probandi of insanity lies on those who alledge it. Herein, it may be sufficient to prove insanity previous to making the will: for a person once insane is presumed so, until it be shown that he has lucid intervals or has recovered. Swinb. 77. Except perhaps the alledged insanity was very long ago, or for very short continuance.

If insanity be apparent on the face of the will, it is invalid. But mere imprudence will not amount to insanity. Burr v. Duvall, 8 Mod. 59, to this head perhaps may be referred Mr. Thelusson's will.

But it will be presumed to have been executed at a lucid interval if nothing appears on the face of it to rebut the presumption: and if it be shown that testator though occasionally insane had lucid intervals. God. 25. 9 Vez. 610.

A will made by non compos, invalid although he recover. 11 Mod. 157. If testator be intoxicated, or childish through old age, he cannot make a will. 2 Co. b. 23.

There must be a sound and disposing mind and memory. Swinb. 77.

In England under 29 ch. 2, ch. 3 and 5, there must be three witnesses to a will of real estate, and they are presumed to attest the perfect sanity of the testator. Cambd. Arg. 23.

Proof of the perfect sanity of the testator in a will of real estate, rests on the devise: the law favours the heir at law, (which is absurdity and injustice. T. C.) Wallis v. Hodgson, 2 Ch. Rep. 300. 2 Atk. 424. 9 Mod. 90. (The feudal reasons for favouring the heir at law do not apply in this allodial country. T. C.)

A sound and disposing mind and memory is a legal question. 6 Co. 23 b. Dawson v. Chater, 9 Mod. 90. Bransby v. Harridge, Eq. Ca. Ab. 406. Webb v. Claverden, 2 Atk. 423. 2 Atk. 324. Hence, where a will is contested by the heir at law, the question must be sent to a court at law.

If testator was perfectly aware of what he was about when he made his will, court of law will not set it aside. Ben-

net's case, 9 Vez. 145. Per Eyre, Chief Justice in that case, we are not to enter too minutely into questions of influence.

Even though testator may labour under prejudices not well founded, yet if he knows what he is doing, that is enough.—Greenwood's case, 3 Br. Ch. Ca. 444. 13 Vez. 89.

The will of an insane person has been set aside, after forty years possession, and in prejudice of a purchaser. Squire v. Pershall, 8 Vin. 169. Powel on Devises, 68, 71. 1 Fonb. Eq. 333.

Where a will has been established in a court of law, equity will not direct a second trial, but under very strong circumstances. White v. Wilson, 13 Vez. 87.

Non compos cannot be executor or administrator, Salk. 36, usually transferred to the committee of non compos.]

CHAPTER XVIII.

Of simulated, dissimulated, pretended & imputed Diseases

A *simulated* disease is that which a person feigns to have; a *dissimulated* that which he endeavours to conceal; a *pretended* when he wishes to gain an advantage, and an *imputed* when the person is supposed to have a disease with which he is not affected.

1. *Simulated diseases*.—The most common causes which induce persons to feign diseases are—exemption from military service, mendicancy to excite commiseration, and the fear of punishment. Revenge, and the hope of receiving exorbitant damages, induce some persons to magnify slight diseases.—Prisoners and soldiers will bear the most active and long-continued treatment, even amputation of a limb, to effect their discharge. In all suspected cases, we should consider the circumstances in which the person is placed, the motives which influence him, his age, habits, and general health, if the disease accords with his age, temperament, and the causes assigned. In these cases, there is an aversion to medicine, or a misapplication of it. This sometimes occurs in real illness, but it rarely happens when severe pain is present.

Amaurosis.—This disease is often feigned by soldiers, and

the fraud is with difficulty detected. Though the pupil in amaurosis is generally insensible to light, there are exceptions; but the pupil in the latter case is not so sensible as in the former. In all doubtful cases, the patient should be frequently examined.

Myopia, or short-sightedness, is in some measure acquired by wearing convex glass. The real myopes can only read with concave glasses; and this fact enables us to detect imposition.

Deafness can be simulated so well, that it is almost impossible to detect the fraud. Fodéré and others relate cases, which defied detection.

Pretended ophthalmia is induced by introducing foreign matters into the right eye. This was observed by Dr. Vetch, in cases in the 28th regiment.

Contractions of the joints, especially of the hands and feet, are often feigned, for the purpose of evading military duty. The diseased joint should be compared with the healthy one, when the fraud may be discovered. Mr. Marshall relates cases that escaped detection, even by the most talented surgeons.

Incontinence of urine, when feigned, is readily detected, by placing a ligature on the penis, and having the person closely watched. In the real disease the penis swells in a short time, while in the simulated this does not happen. Again, if a catheter is passed into the bladder, in the middle of the night, urine will be detected. A large dose of opium will prevent the bed being wetted, in feigned cases.

Wounds and ulcers are produced by mendicants to excite commiseration; and by soldiers and sailors to procure their discharge. In the latter cases, a strict attention to hospital discipline will enable the practitioner to form a correct opinion. Examples of amputation might be cited, illustrative of the determined obstinacy of soldiers, in the cases under notice. Artificial ulcers are superficial, and generally heal by ordinary treatment, as there is no constitutional derangement.

Cancer of the breast has been feigned, and represented by gluing a piece of spleen over the part.

Epilepsy is often pretended, and comes on in the presence

of strangers. On announcing that large incisions are to be made, the actual cautery applied, or castration or amputation performed, the fit is soon terminated, and does not recur. After a fit of the real disease, the patient is languid and dull, and complains of vertigo or great weakness. Sleep usually supervenes. Sternutatories, ammonia, &c. have no effect. The reverse of all this will be observed in pretended cases. A person intent on imposture, however, may resist every application, except the actual cautery, or fire. The real epileptic conceals, or wishes to conceal, his infirmity; the feigned talks of it publicly. this disease is often feigned to escape military flogging.—(See *Marshall, ut infra*).

Convulsions, chorea, catalepsy, syncope, and hysteria, when feigned, are best detected by proposing the application of red iron on the next attack.

Hæmorrhoids have been imitated by the bladders of rats, inflated and filled with blood; hæmaturia, by injecting blood into the bladder, or mixing it with the urine when voided; hæmoptysis by wounding the gums or pharynx; hæmatemesis by swallowing the blood of chicken or other fowls. Attentive watching, and the due consideration of the symptoms, habits, age, &c. will enable us to arrive at a proper decision.

Mendicants have inflated the cellular membrane of the head to imitate hydrocephalus, and have pretended to be dropsical. Every attentive practitioner is now enabled to discover dropsy or pretended pregnancy.

2. *Dissimulated diseases* are exemplified by those who conceal their maladies, or who aggravate slight affections to acquire heavy damages, or obtain revenge. Females have injured the genitals, in order to accuse a certain person of having committed rape; and persons who have been assaulted, very often pretend they are much worse than they really are. Soldiers aggravate diseases to escape the performance of their duty. The attentive examination of symptoms afford proof of the correctness or incorrectness of these assertions.

3. *Pretended diseases* are urged by those who wish to escape the duty of jurors, witnesses, or of soldiers. Deception can scarcely be practised in this way in the present state of science. It is a dereliction of public duty in a medical man to

grant certificates for the accommodation of such persons, for if this practice prevailed generally, the administration of justice would be arrested or prevented.

4. *Imputed diseases* are at once discovered by the absence of symptoms, as when a son alleges that a parent is insane or a wife that her husband is impotent.

CHAPTER XIX.

Disqualifying Diseases.

MEDICAL men are called upon to state whether a person be labouring under disease which unfits him for serving on juries, attending as a witness, undergoing hard labour, the treadmill, or other corporal punishment. It is a rule laid down in most countries, that all acute diseases exempt a man from the performance of most of the duties and offices to which he may be called. Persons affected with epilepsy, convulsions, consumption, or very delicate health, are not fit subjects for long confinement as jurors, or as witnesses in crowded courts. The evidence of such persons may be taken at their residence. In exempting criminals from punishment, though we should lean to the side of mercy, we must not be deceived by false representations, or simulated diseases. A medical man would grossly violate the duty he owes the profession and the public, if he impeded the administration of our humane laws, by using his authority in an improper manner. Motives of humanity must not influence his opinions; he is bound to give a correct decision, according to the best of his skill and knowledge.—By the French law all medical men convicted of having given false certificates, are liable to be imprisoned one or two years, or fined from 300 to 1000 francs.—(*Briand. Man. Med. Legale.*) In these countries physicians and surgeons are bound, by the collegiate oath on receiving their degree or diploma, “to practise honorably.”

Disqualifying diseases for the British army.—All cutaneous diseases, ulcers, buboes, marks of punishment, as of military flogging, cicatrices on the neck or other parts, as from repeated venesection, deformities of the chest, spine, pelvis, su-

perior and inferior extremities, fractures, contractions, mutilations, varicose veins, flatness of the soles of the feet, misplaced or supernumerary toes, hernia, diseases of the testicle and spermatic cord, fractures of cranium, diseases of the eye, of cornea, iris, retina, malformation of the ear, deafness, imperious or diseased nostril, loss of many teeth, stammering, imperfection of moral faculties, diseases of the chest and abdomen, phthisis, hæmoptysis, asthma, hepatitis, nephritic complaints, stone in the bladder, stricture of urethra, retention or incontinence of urine;—in a word, all diseases that require medical treatment.

Staff-Surgeon Marshall proposes the following mode for *examination of recruits*, which is universally practised by regimental surgeons of the British army:—

“In the examination of recruits, the following routine will be found to be both expeditious and safe. The names, trades, &c. of the recruits for the day having been inscribed in the register, let them “fall in,” and be inspected in their clothes. During this inspection we frequently succeed in detecting men who have previously been in the army, and who have been discharged in consequence of disease or disability.

“Let them next be examined singly, undressed. Upon entering the inspection room, each recruit is to walk a few times pretty smartly across the apartment, for the purpose of ascertaining that he has the perfect use of his inferior extremities. He is then to be halted, set up, and examined from head to foot. The inspection may be conducted with reference to the following qualities or condition of the body:—

“Muscular capability.

“General health.

“The condition of the external surface, comprehending chronic eruptions, marks of punishment, ulcers cicatrices, &c.

“The configuration of the thorax, spine, and pelvis.

“The condition of the superior extremities, comprehending symmetry, fractures, contractions, mutilations, &c.

“The condition of the inferior extremities, including symme-

try, &c. as also varicose veins, nodes, flatness of the soles of the feet, misplaced and supernumerary toes.

“Should no material defect be perceived during this survey, the examination may go on. The recruit is then, in imitation of the hospital-sergeant, to perform the following manual evolutions. To stretch out the arms at right angles with the trunk of the body, then touch the shoulder with the fingers, next place the backs of the hands together above the head; in this position let him cough, while, at the same time, the hand is applied to the rings of the external oblique muscles. Examine the spermatic chords and testes, then pass the hand over the bones of the legs. The recruit will next stand upon one foot, and move the ankle joint of the other extremity alternately. Let him then extend the superior extremities forward, for the purpose of having his arms and hands examined; he is in this position to perform flexion and extension of the fingers, and to rotate the fore-arms. The head is next to be examined, including the ears, eyes, mouth, (speech, intellect.) Then ascertain whether he has passed through small pox, or been vaccinated. The examination of a recruit in this manner will require above five or six minutes.”

This able surgeon gives a lucid account of the feigned diseases of soldiers.—(*Edinb. Med. & Surg. Journ.* 1826. v. xxvi, and in his work, entitled *Hints to Young Medical Officers of the Army, on the Examination of Recruits, and respecting feigned Diseases of Soldiers* &c. London, 1828;) a book that ought to have a place in every medical library, civil, military or naval.

CHAP. XX.

Age and Identity.

THERE are some important matters to be considered under this head, as the age of a new-born fœtus, the period of life at which individuals cannot be deemed guilty of crime, as for example, a male being supposed to be incapable of committing a rape under the age of fourteen years, according to our laws; the proper period for marriage; the age at which pregnancy

is possible, and beyond which it cannot occur; and the identity of persons from physical marks, cicatrices, malformations, deformities, &c. These questions have been duly considered in the preceding articles—*Infanticide, Rape, Duration of Pregnancy, Impotency and Sterility, Disqualifications for Marriage.*

CHAPTER XXI.

Medical Evidence.

[The subject of medical evidence is of such importance, and has been so seldom treated of in works on Medical Jurisprudence, that we have thought a more extensive view of the various points connected with it, might prove useful. The following remarks not only include the original text, but also such parts of Dr. G. Smith's "analysis of medical evidence" as seemed of practical importance, with such additions and references as are calculated to elucidate the various questions.

Witnesses in general, and medical witnesses among others, have but little to do with the law or practice of evidence. They do not conduct their own testimony, and hence the responsibility of relevancy or propriety, does not rest with them. If they go astray, it should rather be charged to the court or examining counsel, than on them. To use the words of Dr. Smith, "a witness may be compared to a harnessed horse, in the hands of a vigilant and able driver, who will always keep him in the proper direction, and neither urge him too fast, nor permit him to loiter, whilst the slightest deviation from the proper track or pace will be instantly corrected.* At the same time, it may be advantageous for the medical practitioner, to acquire some knowledge of the manner in which he is to perform one of the most important, and yet one of the most irksome duties, to which his profession subjects him. In the succeeding observations, it is far from our purpose to trespass on the province of the juriconsult, or to animadvert on the law of evidence; but we feel convinced that a due at-

* "Improper evidence ought not to be heard, by the court or jury, and the error will not be cured though the jury be afterwards directed to disregard it." *Irvin vs Cook* 15 *Johnson's Rept.* 239.—*Nash v Gilkeson* 5 *Sergt. & Rawle* 352.

tention to this subject, and to such considerations connected with it, as apply to the medical practitioner in the situation of a witness, will prove useful.

It should always be borne in mind, that what may be evidence in logic, is not always evidence in law; the law allows no intuition, nothing is self evident, but every thing must go through the process of proof. Thus circumstances, which are as notorious, as that the sun shines at noon day, are not admitted without the same rigorous examination, as those of the most mysterious and hidden character. Events constantly occur, calling for judicial investigation, which take place as it were, before the eyes of the whole public, and hence it is impossible to find a jury, to some of whom, the details are not known at the time they proceed to discharge their duty. Hence nothing is more common than for a judge to desire them to forget, or at least to put out of view, any thing they may have heard, beyond the evidence on the trial.

There is an essential difference between evidence and testimony: "The first is a quality in things, whereby they become visible and apparent to the eyes, either of the body or the mind. It is the essential and infallible character or criterion of truth, and is that in effect, which with us constitutes truth. It must be allowed the mark of truth, and these things must be allowed true, which carry with them such a degree of evidence as obliges us to assent to them. A thing is said to be morally evident, so far as we have a distinct notion or knowledge thereof, by unexceptionable witnesses."*

Testimony on the contrary, is the mere delivery of facts or opinions, which may, or may not be received, as evidence; thus a witness may for example, declare a truth, but if the knowledge he possesses of the fact † be acquired from the information of another, even though that other's word should be known as more satisfactory "than many men's oath," it would not be considered as evidence; witnesses in general can speak to facts only, but in matters of science, opinions

* Campell, Philos. of Rhetoric.

† Hearsay is permitted to be given in evidence to prove pedigree &c. Strickland's lessee vs Poole. 1 Dallas, 14.

may be received as evidence.* Thus persons accustomed to inspect hand writings are often called upon for their opinions in cases of suspected forgery; medical men to deliver opinions on cases which they have not seen, &c. But these opinions are not evidence unless given upon oath; this is perfectly correct, for when we consider the lax and unguarded manner in which people put forth what are called opinions under ordinary circumstances, and the pertinacity with which they will maintain and adhere to such opinions, it ought not to be otherwise. There is however an exception to hearsay not being evidence, which is that of dying declarations; these are constantly admitted in criminal prosecutions, when the death of the deceased furnishes the ground of accusation. At the same time before such declaration can be admitted in evidence, it must be satisfactorily proved that the deceased, at the time of making them, was conscious of his danger, and had given up all hope of recovery.† In such cases it is particularly important for medical men to be extremely circumspect with respect to it. Notes, observe *Paris and Fonblanque*, if taken upon the spot or immediately after a transaction, may be used by the witness to refresh his memory, but the notes should be original, not copies. If there be any point in them which the witness does not recollect, except that he finds it there, such point is not evidence, for the notes are only to assist recollection, not to convey information. It should also be recollected, that a copy of a copy is no evidence, for the rule demands the best evidence the nature of the thing admits, and the farther off any thing lies from the first original truth, the weaker must be the evidence; beside, there must be a chasm in the proof, for it cannot appear that the first was a true copy.

We need scarcely add that no witness can be compelled to criminate or defame himself.‡ The obligations incumbent on

* On the subject of opinions being received as evidence See next Page.

† *Pillips Evidence*, 100, 9 *State Trials*, 161. dying declarations.

‡ The maxim "no one is bound to criminate himself" extends to cases where the answer may subject the party to a criminal prosecution or involve him in shame or reproach. *Respublica vs. Gibbs* 3 *Yeates* 429 437 — *Galbraith vs Eichelberger* 3 *Yeates* 515.—*Baird vs. Cochrane* 4 *Sergt. & Rawle* 400.

the medical profession to give evidence are two fold, legal and moral; the former devolves upon us, in common with every other citizen, when we happen to possess knowledge which may be necessary for the purposes of judicial enquiry. In England and this country witnesses are summoned by what is termed a *subpœna*, that is, a summons issued by the proper authority, which must be attended to, *under pain* of consequences.* But, there is also another obligation which custom and general practice have erected into compulsion, as imperative as the former. I allude to the implied compact between the public and a medical practitioner, by which the former claim an indefeasible right to the time, attendance, skill and knowledge of the latter. "Men in general" say the authors of medical jurisprudence, "can only be summoned as witnesses when they have, or are reasonably supposed to have, cognizance of the particular facts in question, and he may therefore deem himself peculiarly unfortunate or imprudent, who is often present at such scenes as give rise to criminal investigation; but the medical practitioner, in addition to his liability of being called on for his assistance, and so becoming acquainted with facts, may also be summoned on matters of opinion."† Indeed it is no insignificant part of our duty to act as witnesses, for we are constantly liable to be made so, in a manner to which no other class of the community is subject. These offices, it must be confessed, are generally painful, always inconvenient and occasion an interruption to business, of a nature not to be easily appreciated or compensated; but as they admit of no substitution, they are to be regarded as appropriate debts to the community, which neither equity nor patriotism will allow to be cancelled.

* Besides the Penalty, a witness who wilfully absents himself may be attached for the contempt, or an action on the case will lie against him. Douglas, 561.

† In general, the opinion of a witness is not evidence, he must speak as to facts, but on a question of science or trade, or in other questions of the same character, persons of skill may speak not only as to facts, but are allowed also to give their opinions in evidence. Evidence of character is founded on opinion, and the opinion of a medical man is evidence as to the state of a patient (See Phillip's Evidence, 227.)

On trials for murder by poisoning, the opinions of medical men are frequently required, to determine whether the deceased did come to his death by poison. See 1 McNally's Evidence 329, 335. But when opinions of Physicians are given in evidence *the facts* on which they ground their opinions must be stated. Dickinson vs. Barber 9 Mass. Rep. 225

We have said that the fulfilment of these offices is generally painful; in fact there is scarcely a situation in which a medical man can be placed, that has so strong a bearing on his reputation, or where so much personal uneasiness is endured. The learned authors of the work just quoted, one of whom is an eminent lawyer, observe that a medical witness is too frequently rendered miserable and inefficient for the purposes of justice, from the novel and perplexing situation, in which he then finds himself, and that too often, there is but little apparent difference between the situation of a witness, and that of a criminal. The liberty which is accorded to the lawyer, is too frequently applied to the purpose of confusing a witness, rather than eliciting the truth. We acknowledge, that it is not very easy to rectify this, every counsel must act according to the view he has of the proper means of maintaining the interest of his client, and this impulse will manifest itself variously, according to the feelings, talents and disposition of the advocate, influenced in no slight degree by the same circumstances on the part of the witness. Medical witnesses, after being prepared to discharge their duty to the best of their ability, will often find that the examination will assume a wholly different ground from what they expected, and may be wide of the point; this may occur either purposely, or through want of acquaintance with the subject, on the part of the examiner; the consequence of which is, that the witness is exposed to the danger of being misunderstood, and having his statements misapplied, of being asked questions which cannot be answered, or of being rendered amenable to unmerited censure, for testimony, he never intended to give.* A medical man under such circumstances is thrown entirely on his own intrinsic resources; he cannot refer to his books, or consult a brother practitioner on his difficulties; he is at the stake, and if he acquits himself badly must endure the scrutiny and displeasure of the bench, the brow beating of the bar, the scorn, laughter or contempt of the audience, the discontent of friends, with all the consequences, that may follow to his reputation. A dexterous examiner who

* On a *cross examination*, in order to try the credit of a witness, *facts may be supposed* apparently connected with the cause, which have no real existence except in the imagination of the counsel. Phil. Evidence, 104.—Peake on Evidence, 206.

is tolerably conversant with the subject at issue, has a great advantage over any witness, however prepared, and may contrive to lead him astray in such a manner as to deceive him into a train of admissions, the inferences from which are to be afterwards turned against him. Therefore caution in speaking, as well as in preparing to speak, should be observed by him, and he should on no account answer a question till he clearly understands it, or pretend to frame an answer when he knows nothing of the matter; and above all, sedulously avoid conjectural observations, continually bearing in mind that what he says, must stand upon record, as signifying what he means. It will not do under such circumstances, to deliver one statement at first, and afterwards to wish to substitute another. Such a practice would strike at the foundation of evidence, and were it permitted, justice could never be duly administered.

Like other men we have our preferences and our prejudices, we form our particular attachments, and in common with them, indulge hopes and wishes in regard to the welfare of those who are its objects. This influence is common to all and is felt in different degrees throughout the whole of society; but when Justice, which knows no distinctions, and considers all as alike amenable to her controul, finds it necessary to investigate the merits of an implication against whatever individual, and of whatever nature, she expects that her agents will after her example forget all attachments or resentments. Lord Bacon has termed evidence the "lantern of justice" as shedding its light equally on all, and showing defects or developing excellencies without regard of persons. Witnesses are seldom called upon, except by one of the parties concerned in the issue, and of course are required to attend, in the expectation that their evidence will favor the side on which they are produced. It is in criminal cases, when we are called upon either by the commonwealth, or the counsel for the accused, that we are perhaps, involuntarily, in the greatest danger of being unduly biassed. When we see an unfortunate man before us, anxiously watching the words that may fall from our lips in the form of a statement, which is to consign him to a gibbet, or a goal, or shall restore him to his

family and to society, it is difficult to prevent compassion from disturbing that equilibrium which should always be maintained. The result of our evidence is not to be considered, and strictly speaking, it is our duty to be equally free from compassion as from resentment. It is a distinguishing feature of our law, that no man, be he accused of ever so heinous a crime, of which the notoriety may be such as not to require a shadow of proof for the satisfaction of individual minds, is not guilty until proved so by the very clearest evidence. In some other countries, and especially in France, the accused is brought before the tribunal, rather in the state of a convict, than one merely charged with, or suspected of crime. He is presumed to be guilty, and advantage is taken to prevent him from establishing his innocence. In confirmation of this, we need only refer to the trials in the Fualdes case and that of Castaing. Here, on the contrary, every pains is taken to defend a man, who is perhaps eager to confess his guilt. And even when a prisoner * does plead guilty, how often is he admonished to retract his confession, and abstain from being accessory to his own condemnation. But although the spirit of our jurisprudence, thus supposes every man innocent until he is proved guilty, it does not permit the exercise of any bias or partiality; where there is such a disposition on the part of a medical witness, he will be placed in jeopardy, not only from the examination he undergoes by the counsel for the party in whom he feels interested, but still more so by what is termed the cross examination, by the adversary's lawyer. His object being not only to elicit something inconsistent with what may have been previously stated, but also promote his client's cause, by obtaining evidence in his favour, even from the hostile quarter; when thus taken to task by the opposite party, if witnesses have permitted themselves to have been influenced by partiality, or any other motive in their testimony, they will in all probability either be obliged to contradict their own evidence or modify it so much, as to render it detrimental to the side they have favoured, and at

* Confessions of guilt made by the defendant under promises of favour to be shewn him by the public prosecutor, cannot be given in evidence against him. *Commonwealth vs Chabcock*, 1 Massachusetts Reports 144.

the same time to stamp an indelible stigma on their own character.*

The oath administered in our courts to witnesses, binds them to speak the whole truth, and nothing but the truth, touching the matter in question. This formula appears very explicit and clear, and with regard to matters of fact is perhaps always applicable; but in what manner are we to apply it to matters of opinion? how in such cases is the whole truth to be displayed, in what mode is it to be communicated on points of science. This has created considerable discussion and variance of opinion; some have affected to lay down one rule, whilst others have pretended that the opposite would be more suitable, as if it were possible to furnish any rules for behaviour, under circumstances that vary like the aspect of the clouds. Deviations constantly take place, more frequently perhaps than we are aware of in matters of opinion, and yet those who fall into them may be as little chargeable with wilful or even conscious error, as the man with such a vitiation of his sense of vision, as to mistake colours, and who should swear that red was blue; this though the honest expression of his belief, is yet false. In delivering evidence, it has been recommended to utter nothing beyond a bare answer to a question. This is going much too far, and would defeat the very object for which we are called into court. It is absurd to expect that questions can be so framed that a simple yea or nay should answer them. Nor will the adoption of such a course prevent the examining counsel from repeating or varying his questions, or from amplifying the course of his examination. Others again have recommended that we should state every thing that occurs to us, relative to the point at issue, but this is even more reprehensible than the former. In a majority of cases, it is advising the performance of impossibilities. A few gifted minds might, perhaps, by such a course, save the time of the court, and convey in the most convincing manner, the clearest views of the truth; but by far the great-

* A party is not permitted to contradict or rebut the evidence given by his own witness, "nor can any *inconvenient* fact illicitly in a cross examination, not inconsistent with the evidence in chief, be denied or controverted by the party cross examining. The reason of the above rule is, "That when a party cross examine a witness he makes him his own." Jackson vs son 2 Caines Reports. 178.

est number of persons, would miserably fail in the attempt. But even supposing that it might always be accomplished, it would seldom be permitted, and many instances are to be found where it was so prevented. It would not always suit the purpose of the lawyer, who knowing what it will be desirable to elicit, and apprehensive perhaps of something coming out that he wishes to be concealed, will studiously put his questions in such a way as shall mould the intelligence of the witness to the purpose. There is no better proof of this than is afforded by the examination of the celebrated John Hunter, on the trial of Captain Donellan, for the murder of Sir Theodosius Boughton. In fact, overwhelming the court by a flow of garrulity, does not expedite the relief of a witness; he may gallop on in this way for some time, *sed cui bono*. He will perhaps be checked by the same observation that was once made by a presiding judge, "a little more deliberation Sir, and we shall the sooner finish." One thing appears very manifest, that a witness who might be thoughtless enough to indulge in such a style of address, and might at the same time be permitted to proceed to a certain length, would be very likely to lay himself open to a severe cross examination, by furnishing openings for questions, that a more cautious and considerate course of conduct would have avoided. We recommend the witness "say Mess. Paris and Fonblanque to steer a middle course, first answering patiently, distinctly and truly, the questions put by the counsel on both sides, or by the jury; and if none of these elicit the whole truth, and any material point remains to be disclosed, the presiding judge will always admit, and gratefully receive the additions or explanations, which may be necessary to the ends of justice."

To the caution of these gentlemen, may be added, some others of equal importance: the first, is for witnesses not to be impatient, as it will destroy their usefulness, and perhaps be the cause of detaining them longer than they otherwise would have been: the next, and most necessary is, to keep their temper. Be not accessary in really making your examination a *cross* one, as was observed by Mr. Sampson, in the case of Whistelo, in addressing a witness who had betrayed some impatience under a long examination. "It might be necessary

even with so learned a witness, to say that the adverb cross, was not to be taken in the vulgar acceptation. Cross was in contradiction to direct, and cross examination meant only, indirect examination. The ignorant who take things in a wrong sense, often show ill humour, and put themselves in an attitude to be cross, because they are to be cross examined." When a medical practitioner has to perform the important duty of a witness, it should be clearly defined, conscientiously felt, and thoroughly understood; his opinion ought to be conveyed in a perspicuous manner, he should be solemnly impressed that he speaks upon oath, the most sacred pledge before God, between man and man; he is not to palm on the court the trash of medical hypothesis as an apology for crime, and above all his opinion should be thoroughly understood by himself, so founded on experience and fortified by reason, that it may resist the blandishments of eloquence and the subtle underminings of cross examination. Exceptions as to general facts or established practices relating to the point at issue should not be passed over in silence. There is a very marked difference between founding an opinion, or giving testimony upon rare deviations from the course of nature and events, and wholly omitting to notice such exceptions. A scientific witness would prejudice his own character, if when publicly called upon to speak of his own knowledge, he gave an imperfect or erroneous statement, which it might fall to the province of others to correct; and we may even go further, it would be little more in his favour if he corrected himself upon compulsion. The following observations appeared some time since in animadversions on the testimony of a medical man in a celebrated case in England. "This gentleman seems to have been truly unfortunate in the grounds of his opinion. It would appear as if he formed it from the details afforded by a servant, and that a discarded one. In his cross examination, also he admits exceptions enough to eat up his evidence in chief. It is with no small regret, that we find ourselves compelled to animadvert on the testimonial deportment of men of eminence; but it has been the fate of the most eminent, to have occasionally given too much scope for animadversion on similar occasions, and we seize the occasion to say to our

younger brethren, that to us, who are in the habit of looking at medical practitioners in the situation of witnesses, with a scrutinizing eye, they appear in a disadvantageous light, when they allow the most important and most manifest parts of the truth to be *wrung* from them by a cross examination."

There is another point connected with evidence that we approach with some delicacy. In consequence of our being sworn to disclose the whole truth, we may be called upon to reveal secrets confided to us in professional confidence. We know, that it is supposed by many persons, that physicians enjoy and may avail themselves of the privileges, allowed to gentlemen of the bar, but such is not the case. It is true, as we have before stated, that no man is bound or allowed to give any evidence which will implicate or criminate himself. Thus for instance, if a surgeon be privy to a duel, he cannot be compelled to declare his knowledge of, or participation in the fact, as such a disclosure would criminate him as being an accessory. Peake in his law of evidence observes, "Barristers and attorneys, to whom facts are related professionally, during a cause or in contemplation of it, are neither obliged nor permitted, though they should so far forget their duty as to be willing to do so, to disclose the facts so divulged during the pendency of that cause or at any future period. This rule of professional secrecy extends only to the case of facts stated to a legal practitioner, for the purpose of enabling him to conduct a cause; and therefore a confession to a clergyman or priest for the purpose of easing the culprits conscience, the statement of a man to his private friend, or of a patient to his physician, are not within the protection of the law. We should certainly think, that the friend or physician who involuntarily violated the confidence reposed in him, acted dishonourably, but he cannot withhold the fact, if called upon in a court of justice."*

The opinion of most writers on medical jurisprudence is clearly in favour of the moral right, for a maintenance of se-

* This protection does not extend to any other species of confidence than that which is placed in a legal adviser; for as the law stands at present, though it has been regretted by the courts, physicians, surgeons, catholic priests who receive confessions, and others, whose situation entrusts them with concerns as delicate as these, are compelled to make the fullest disclosures. 3 State Trials 715.—4 Term Repts. 759.

crecy, although they are all obliged to bow to the supremacy of the law.* Beboe observes. "Les tribunaux ne doivent, ne ne peuvent exiger d'un medecin, qu'il revele un secret qui eui aura confié relativement a son etat. En tout cas, le medecin peut et doit même s'y refuser. La religion, la probité, le droit des gens lui en font un loi." Dr. Smith fully agrees with this author and addresses some strong proofs and able reasoning in support of his opinion. Society is aware of our moral and professional obligations to secrecy, and under a belief in the force and inviolability of these obligations, we become the depositories of secrets, which otherwise would never have been revealed. In a moral point of view, this forcing the breach of private confidence, must be productive of the most injurious and mischievous consequences, for from the public nature of the proceedings of our tribunals, any circumstance there divulged, becomes as notorious and well known to the community at large, as if it were placarded at the corners of the streets. The injury inflicted, it is true, does not affect either life or property, but the violation of private delicacy and reputation, that it occasions, is oftentimes of equal consequence. It must be evident to medical men, that in the case of females particularly, we may be, and not unfrequently are, called upon to reveal circumstances, and circumstances too, having but a remote or insignificant bearing on the question at issue, of which this public promulgation is worse than any punishment that could be inflicted. Dr. Gregory observes "secrecy is particularly requisite where women are concerned; independently of the peculiar tenderness with which a woman's character should be treated, there are certain circumstances

* The reason of this exception may be thus explained. All confessions and declarations made to Physicians, clergymen, and others, are themselves perfectly gratuitous and disconnected with the immediate exercise of their duties, but the admissions and statements given to counsel by the client, being for his instruction, and without which he could not possibly understand the case or advise the client, are ex necessitate rei held sacred. The privilege is not that of the counsel, but of the client whom he immediately represents.

"A counsel or solicitor may be required to give evidence of *any thing* which he knew before his retainer, for the circumstance of his being retained cannot affect the knowledge of facts which had previously come under his knowledge. 4 Term Repts, 752.—10 Modern Rept. 40."

"A person retained to conduct a cause may be examined as to any collateral fact, not in its nature strictly private." Hawkins Book 2, chap 46, Sec. 89.

of health, which, though in no respect connected with her reputation, every woman, from the natural delicacy of her sex, is anxious to conceal, and in some cases, the concealment of these circumstances may be of consequence to her health, her interest and her happiness." It is true, whenever these revelations are forced from us by the law, that society will exculpate us from even the shadow of a stigma, and the sufferers by our declaration may exonerate us, but still the struggle of feeling and duty in the breast of every man of honor, must under such exposures of private frailties and misfortunes be a cause of regret and dissatisfaction. There is but one course left for us to pursue, which is to withhold all such disclosures, till they are forced from us by the court, and never voluntarily and unasked to break the seal of private confidence. We are fully aware, that making these remarks, we lay ourselves open to severe animadversion, but the moral obligations to secrecy among physicians are, and must necessarily be of so strong a nature, that we feel satisfied that we only speak the united voice of the profession. Zacchias enumerates loquacity among the errors of physicians, cognizable by law, and censures it as particularly deserving of punishment, when it leads to the disclosure of secrets, upon which he alludes to the clause binding to secrecy in the celebrated oath of Hippocrates." This is as follows, "Whatever, in the course of my practice, I may see or hear, even when not invited, whatever I may happen to obtain knowledge of, if it be not proper to repeat it, I will keep sacred and secret within my own breast. If I faithfully observe this oath, may I thrive and prosper in my fortune and profession, and live in the estimation of posterity, or on breach thereof, may the reverse be my fate." Zacchias distinguishes between judicial revelation and that which is not, "*nam in judicio tenetur omnino veritatem detigere*,"—and thus appears to be in the same predicament as modern writers.

When called upon as witnesses, we ought to fulfil that duty without a humiliating apprehension; and leave bad temper, a suspicious disposition and impatience, if these be infirmities of our nature, behind us. We should maintain the spirit, and observe the deportment that should exist between gentlemen, and

if there should occur any cause for dissatisfaction, never forget our own self respect. Of all things that should be cautiously avoided, is trying a lawyer at his own weapons; as is pertinently said by Haslam. "the lawyer's object, being the interest of his employer, for the fulfilment of his duty, he is frequently compelled to resort to a severity of investigation which perplexes the theories, but more frequently, kindles the irritable feelings of the medical practitioner; however dextrous he may show himself in fencing with the advocate, he should be aware, that his evidence ought to impress the judge, and be convincing to the jury." There is one other caution connected with this part of the subject, that should not be overlooked, which is, the language in which a medical witness delivers his testimony; this should be freed as much as possible from professional technicalities; he should recollect he is called upon to instruct and elucidate, and not make a display or mystify, and that his auditors may always be presupposed ignorant of the subjects, on which he is examined.*

The next points on which we shall touch, are the respective claims of experience and authority, as grounds of opinion in matters of science. By the first of these terms, we mean to designate, that knowledge which may have been derived from personal inspection, or what an individual himself has seen, or rather done, in the practice, or active exercise of his profession; by the latter is to be understood, a proper reliance on the recorded, or imparted knowledge of others.

The general practice in our courts has been to demand an account of our own experience. This may perhaps arise from the narrow limits to which it has been found proper to confine the word experience. When a witness speaks from experience, as it is generally understood, he is supposed to speak from his own knowledge—and any statement on the testimony of others, might appear as hearsay. But this is not in our apprehension the proper view of the subject. We are entitled to speak from authority, when after having satisfied ourselves of

* There is probably no science so little understood, and of which even the technical names are so little known at the bar, as Physiology; hence in a great measure arise those perplexing scenes which not unfrequently occur on the examination of medical witnesses.

the truth and propriety of the testimony, of those from whom the authority is derived, we adopt their representations as satisfactory evidence of the truth, and make their opinions our own. The error in allowing undue preference to personal experience, rests with ourselves; for it is because we advance statements that we have not incorporated with our own knowledge, and advance them *as* the opinions or experience of others, that we are desired to confine ourselves to what we know. We are much more frequently called into court to give opinions and statements, as to the laws of nature, or the effects of certain agents upon the animal economy, than to relate mere events. In such cases, more than one practitioner is called upon, and it has been customary to estimate that witness highest, who appeals most to experience. Frequently also, a witness is examined as to the extent of this qualification, the meaning of the word being restricted in all cases to what he has himself seen or done. Thus it may happen, that the fortuitous occurrence of being an eye witness to operations, that from the subject matter of the point at issue, is allowed to supercede the knowledge that study alone can impart. We freely admit, that *prope paribus*, the man of experience should be preferred to him who is without it; but when one is found who possesses no qualifications but that of having seen, we should doubt his claim to paramount confidence. In fact, what has been rightly perceived, may be misremembered, what is rightly remembered, may through incapacity or inattention, be misreported, and what is rightly reported, may be misunderstood. In any of these four ways, either by defect of memory, want of proper language, veracity in the relater, or misapprehension in the hearer, there is a chance that the truth received by the information of the senses may be misrepresented or mistaken, and the man of mere experience, be a man of information through the senses only. It is very possible therefore, that he may be inferior in knowledge and intelligence, to the diligent student. Medical opinions must have their original foundation in authority, and if we were to confine the amount of a man's real knowledge, to that obtained from personal experience, or in other words, from observation, we should commit the greatest of all absurdities.

Personal experience, for that is certainly what the latter word in its ordinary sense must be restricted to, is in a great measure accidental, and falls to different individuals in different forms and degrees; and we believe that no small portion of that odious discrepancy, so prevalent among medical witnesses, is attributable to an affectation of being men of experience, rather than men of learning.

But we must not, however, be understood to despise experience, and still less would we advocate a blind reliance on authority. We are fully aware of the mischief that has accrued to medicine from the overbearing influence of great names. But at the same time, unless a medical man enlarges his experience by a knowledge of, and deference to that of others, his own personal stock is not likely to be worth much. All men are inclined to place great reliance on their own experience, and those who have the least, are sometimes unusually vain of their share. Medical testimony is little else than a reference to authority, and to put this out of sight, would lead to a compromise of the rights and dignity of the profession as well as the force of the witnesses own evidence; and surely it is but an ordinary exercise of common sense, not to substitute our own modicum of authority, in place of the ample store accumulated by the sages of the profession.

The last subject connected with medical evidence we shall mention, is that of preparation. I have already said that a medical witness may be called upon in an unexpected manner, though for the most part some previous idea of the subject of enquiry will readily be obtained, to do which is our indispensable duty, even to the minutest details. Dr. Smith gives an apt illustration in a story of a carpenter, who happened to be a witness to a serious affray; in consequence of which, as he had foreseen, he was called upon to give evidence. Being asked how far he was from the spot at the time, he gave the distance even to the fractional part of an inch; being interrogated as to his reasons for thus being so exact, he stated, that thinking some fool might ask him, he measured the ground. Putting the impertinence of this reply out of view, we would do well, in all cases to follow this man's example, and carefully mea-

sure every circumstance, that it falls within our province to explain and elucidate.

The following observations of Dr. Ryan, apply still more forcibly to this country than to England. Here the office of Coroner being dependent on the voice of the people, persons are generally called to fill it, not from any competency to fulfil the duties it involves, but because they have most interest with the dominant party. In fact, it cannot be denied, that this office is too often held by individuals who are not only incompetent to appreciate the professional evidence given before them, but are absolutely illiterate and uneducated. Were this officer generally a lawyer, as is stated by Dr. Ryan to be the case in England, the evil would be much less; for belonging to the legal profession, presupposes the possession of a certain degree of learning and talents.

“It is a great defect in the English law, that this officer is generally a lawyer; for it must be obvious as the noonday sun, to all scientific medical men, that no private individual, however well informed, is competent to ascertain the causes of death, in nearly all cases of homicide. He is unable to detect the incompetency of medical witnesses, to discover their erroneous practice or conclusions, to decide upon their conflicting evidence; in a word, to arrive at the truth. What can a legal coroner know about the analysis of the numerous poisons, of the many diseases that so closely simulate the effects of poisons, and require the greatest discrimination from the most eminent medical practitioners. Neither can he discover any defect in the medical treatment; nor of the fatal effects produced by the negligence or disobedience of the deceased or of his attendants. How can such a person form a just estimate of the influence of age, sex, temperament, habit, and constitution, in rendering slight injuries, dangerous or mortal—facts that would often palliate the conduct of the accused, and save the forfeiture of his liberty and reputation? How can such a man estimate the danger of contusions, wounds, and other external or internal agents destructive of health and life? These and a thousand other arguments may be urged against the incompetency of legal coroners. If medical coroners were appointed, all circumstances for and

against the accused, would be correctly and fairly estimated; medical men would be more careful in their practice, much better acquainted with the various branches of their science, the sick would be more carefully attended to, and the accused would have a much greater chance of justice, than is afforded under the existing state of things. Ignorant and illiterate pretenders to physic, would be much more cautious how they undertook the treatment of disease, and humanity would be the gainer. A great part of the profession would be averse to the appointment of medical coroners, and this part consists of those who call themselves surgeons without the legal qualification. Their number far exceeds that of the qualified members, more especially in London; and hence it was, that such medical men were opponents to Mr. Wakely, in his contest for the office of coroner. On that occasion, it was urged that a medical coroner could not comprehend the rules of legal evidence, but it was forgotten that the magistracy of the kingdom, most of them private gentlemen, act as coroners, and there is no objection urged as to their competency on this head. Now, without any disrespect to legal or civil coroners, I must contend, that medical men in general are as intelligent and as well informed as these classes of society, in general much better, and fully as competent to comprehend the rules of evidence. It requires no extraordinary intelligence to understand the principles laid down in *Phillips on Evidence*, or to acquire as perfect a knowledge of the law as the majority of magistrates and attornies. In support of this statement, the reader may be reminded, of the signal defeat of the great law luminary, Sir James Scarlett, by Mr. Wakely, and of the triumph of this same gentleman in the court of Chancery, in the case of *Abernethy v. Hutchinson*.”]



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THE want of a comprehensive work on subjects connected with PRACTICAL MEDICINE including PATHOLOGY and PATHOLOGICAL ANATOMY, is one which has long existed in this country. The Medical Dictionaries heretofore published, and the Systems of Medicine in the hands of the student, may be said, without invidiousness, to fall very far short of presenting the English reader with such a compendious survey of the actual state of BRITISH and FOREIGN MEDICINE as is absolutely required by him. Some of them are too limited and too superficial in their character; others are too voluminous, too intricate in their arrangement, and too indiscriminate in their contents; and all are open to the serious objection of failing to represent the improvements and discoveries by which the scientific labors of the members of the medical profession, in various parts of the world, have been rewarded since the commencement of the present century.

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In pursuance of this design, every thing connected with what is commonly called the PRACTICE OF PHYSIC will be fully and clearly explained. The subject of PATHOLOGY will occupy particular attention, and ample information will be given with relation to PATHOLOGICAL ANATOMY.

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